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JUL 79 R G POWELL
AMRL-TR-75-50-VOL-141

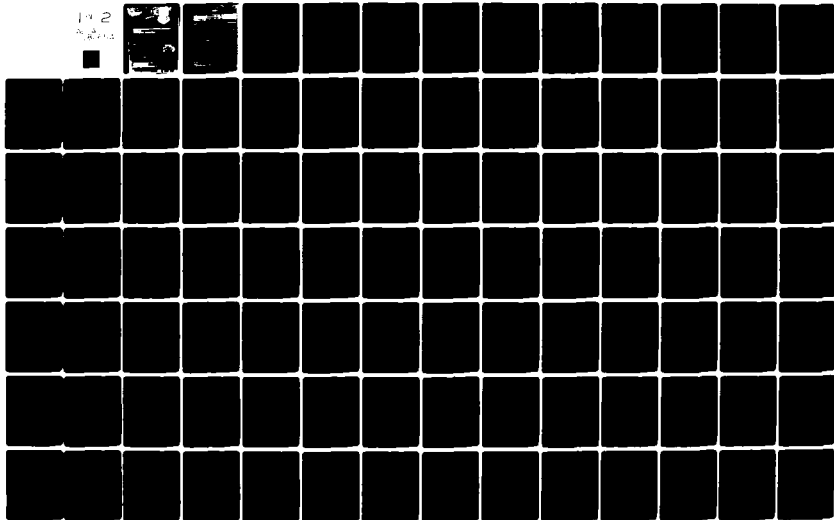
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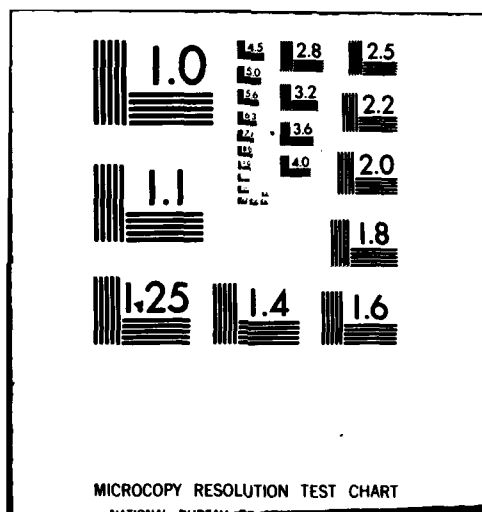
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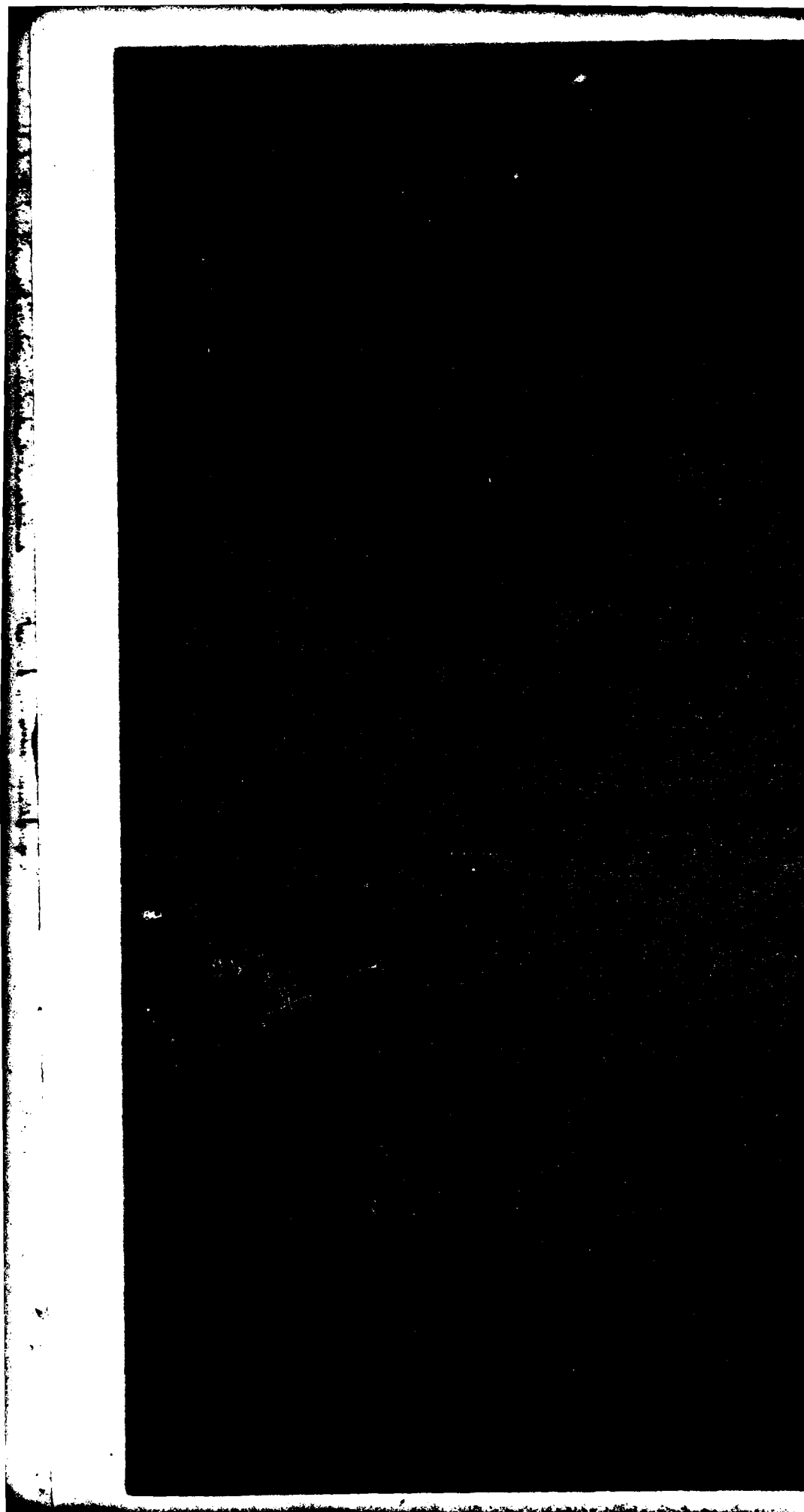
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The USN F/A-18 is a carrier based fighter-attack aircraft powered by two F404-GE-400 turbofan engines. This report provides far-field measured and extrapolated data defining both physical and psychoacoustic measures of the bioacoustic environments produced by this aircraft operating on a ground runup pad for five engine conditions. Far-field data measured at 19 locations are normalized to standard meteorological conditions and extrapolated from 75-			

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8000 meters to derive sets of equal-value contours as a function of angle and distance from the source. These contours are measures of overall and band sound pressure levels, C-weighted and A-weighted sound levels, preferred speech interference level, perceived noise level, and limiting times for total daily exposure of personnel with and without standard Air Force ear protectors. Refer to Volume 1 of this handbook, "USAF Bioenvironmental Noise Data Handbook, Vol 1: Organization, Content and Application", AMRL-TR-75-50(1) 1975, for discussion of the objective and design of the handbook, the types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc.

PREFACE

This report was prepared by the Biodynamic Environment Branch, Aerospace Medical Research Laboratory under Project/Task 723107, Technology to Define and Assess Environmental Quality of Noise from Air Force Operations.

The author gratefully acknowledges Mr. John Cole for his assistance in preparing this report, Lt Thomas Rau, Mr. Robert Lee and Mr. Jerry Speakman for their assistance in acquiring the raw data, Mr. Keith Kettler, Mr. Henry Mohlman and Mr. Fred Lampley of the University of Dayton for assistance in the mechanics of data processing, and Mrs. Peggy Massie for assistance in typing and preparation of the graphics.

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INTRODUCTION

The USN F/A-18 is a carrier based fighter-attack aircraft powered by two F404-GE-400 turbofan engines. The aircraft was manufactured by the McDonnell Douglas Corporation and the engines by the General Electric Company.

This volume provides measured and extrapolated data defining bioacoustic environments produced by this aircraft during ground runup operations. Such data are essential to evaluate ear protection requirements, limiting personnel exposure times, voice communication capabilities, and annoyance problems associated with ground runups of the F/A-18 aircraft.

This volume is one of a series published by the Aerospace Medical Research Laboratory (AMRL) under the same report number (AMRL-TR-75-50) as a multi-volume handbook that quantifies the noise environments produced at flight/ground crew locations and in surrounding communities by operations of military aircraft and ground support equipment. The far-field, community-type noise data in the handbook describe the noise produced during *ground operations* of aircraft, ground support equipment, and other ground-based equipment or facilities.

Volume 1 of this handbook discusses the objectives and design of the handbook, the types of data presented, measurement procedures, instrumentation, data processing, definitions of quantities, symbols, equations, applications, limitations, etc. Volume 2 provides a method and data for adjusting the handbook's far-field noise data, which are for standard meteorological conditions (15°C temperature, 70% rel humidity, 0.760 meter Hg barometric pressure), to derive comparable data for other meteorological conditions. Refer to *Volumes 1 and 2* (references 1 and 2) for such information because it is not repeated in other handbook volumes.

A cumulative index lists those aerospace systems contained in the handbook, and identifies the specific volumes containing each type of environmental noise data available (i.e., inflight/flight crew and passenger noise, near-field/ground crew noise, far-field/community noise). Volume numbers are assigned sequentially as individual volumes are published. This index is periodically updated as individual volumes are published and is available upon request from AMRL/BBE, Wright-Patterson AFB, OH 45433. Organizations on the distribution list for the handbook will automatically receive a copy of each updated index.

Direct any questions concerning the technical data in this report and other handbook volumes to: AMRL/BBE, Wright-Patterson AFB, OH 45433; AUTOVON 78-53675 or 78-53664; Commercial (513) 255-3675 or (513) 255-3664.

1. Cole, John N., *USAF Bioenvironmental Noise Data Handbook Volume 1: Organization, Content and Application*, AMRL-TR-75-50 (1), Aerospace Medical Research Laboratory, Wright-Patterson Air Force Base, Ohio, 1975.
2. Cole, John N., *USAF Bioenvironmental Noise Data Handbook, Volume 2: Procedure to Evaluate Effects of Non-standard Meteorological Conditions on Far-Field Noise*, AMRL-TR-75-50 (2), AMRL, WPAFB, OH, 1975.

FAR-FIELD NOISE

MEASUREMENTS

AMRL acquired the far-field data during a 1-hour test period thus keeping similar meteorological conditions throughout the test. Figure 1 shows the ground runup area (trim pad), ground cover, aircraft orientation and microphone measurement sites on each semicircle. The center of the 75 meter radius semicircle used in surveying the F404-GE-400 engine was on the ground directly below the intersection of the aircraft's centerline and the plane passing through the engine's exhaust-nozzle exit. The ground runup area did not have a blast deflector; therefore, the engine's exhausts were in a "free-flow" condition.

Table 1 provides cockpit readouts of engine characteristics (RPM, fuel flow, etc.) for each power setting used in the far-field tests. Also listed in this table are the surface meteorological conditions during data acquisition.

All microphone measurement sites are in the acoustic far-field of the source where the sound wavefronts spherically diverge and the noise source may be regarded as a point source.

A portable microphone/tape-recorder system was used to sequentially record the noise at each far-field location. The microphone was attached to a hand-held pole, pointed at the source (0° angle of incidence) and vertically scanned from 0.5 to 3 meters for a period of 5-10 seconds during data acquisition at each microphone location. These samples were then time-integrated to derive a root-mean-square sound pressure level. Vertical scanning and time-integrating together reduce anomalies frequently present in data acquired by a fixed height microphone.

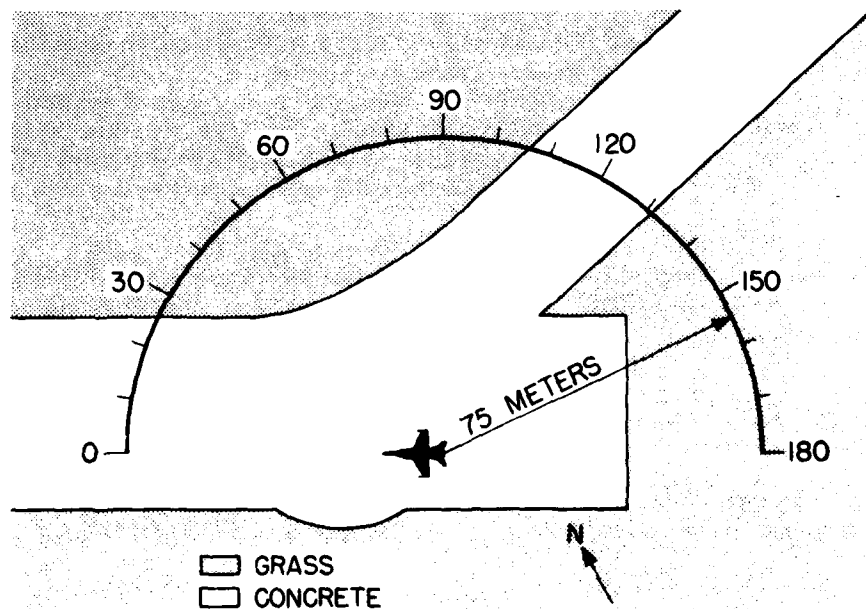


Figure 1. Far-Field Measurement Locations on the Trim Pad at NAS, Patuxent River MD

TABLE 1
TEST CONDITIONS
FOR FAR-FIELD NOISE MEASUREMENTS

F/A-18 Aircraft, Ground Runups, NAS, Patuxent River MD
13 April 1979

Aircraft Engine Operation

Idle	#2 (Starboard) Engine 31 % NC, Core Speed 63 % NF, Fan Speed 449 C, EGT, Exhaust Gas Temperature 34 psi CDP, Compressor Discharge Pressure 16 C, EIT, Engine Inlet Temperature 624 LBS/HR, FF, Fuel Flow
85% Runup	#2 (Starboard) Engine 83 % NC 85 % NF 655 C, EGT 170 psi CDP 15 C, EIT 3807 LBS/HR FF
Military	#2 (Starboard) Engine 98 % NC 94 % NF 815 C, EGT 266 psi CDP 13 C, EIT 7260 LBS/HR FF
Full Augmentation (Minimum)	#2 (Starboard) Engine 99 % NC 95 % NF 813 C, EGT 270 psi CDP 13 C, EIT 7279 LBS/HR FF Plus Afterburner
Full Augmentation (Maximum)	#2 (Starboard) Engine 99 % NC 95 % NF 807 C, EGT 278 psi CDP 13 C, EIT 7367 LBS/HR FF Plus Afterburner

Meteorology

Temperature	18 C
Bar Pressure	.766 m Hg
Rel Humidity	65 %
Wind — Speed	3.6 m/sec (7 kts)
— Direction	250 Deg

RESULTS

Table 2 lists the overall and 1/3 octave band SPL measured at the far-field locations under meteorological conditions at the time of the test. Data in all other figures and tables are based on these levels. These data were normalized to 100 meters distance and standard meteorological conditions (15 C temperature, 70% relative humidity, 0.760 meter Hg barometric pressure) and used to derive the graphic data in Figure 2, which provides a compact summary of the far-field noise characteristics of the F/A-18 aircraft in a standard format.

Figure 3 and Table 3 present two basic acoustic measures, the acoustic power level and the directivity index, respectively. The acoustic power level describes the power radiated by the source as a function of frequency. The directivity index is a standard acoustical engineering measure that describes the geometric way in which the source radiates this power as a function of both frequency and angle from source. These basic source measures are primarily of interest for acoustical engineers and noise generation/control specialists.

Estimates of the noise levels for intermediate power settings (e.g., 80% RPM) and/or different number of engines operating (e.g. two engine) can be determined as explained in Volume 1 of this handbook.

Figures 4 through 10 are sets of equal noise contours describing seven different measures of noise as a function of angle and distance from the source for standard day meteorology. They are respectively, overall sound pressure level, C-weighted sound level, A-weighted sound level, perceived noise level, speech interference level, permissible exposure times for personnel and octave band sound pressure levels.

Data excessively influenced by spurious background/electronic noise were eliminated from all figures and tables. No data are presented at the 170/180 degree locations above idle power because of turbulent air flow behind the aircraft. Typically, the A-weighted levels for these angles are 10 to 20 dBA below the level measured at the 160 degree microphone location.

Test personnel performed noise surveys during quiet periods when the background noise was minimal, e.g., early in the morning when no other aircraft or engine test stands were operating. Data eliminated because they were near the background/electronic noise were generally not significant because the levels were so low (e.g., Table 2, idle power).

Volume 2 of the handbook describes the influence of meteorology on far-field noise environments, and provides, if required, the factors necessary to adjust the handbook's standard meteorological day data.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)																				IDENTIFICATION:	
1/3 OCTAVE BAND																					
DISTANCE = 75 METERS																				OMEGA 1.4	
NOISE SOURCE/SUBJECT:																				TEST AM-007-001	
(OPERATION:																				RUN 01	
(IDLE POWER																					
(63% RPM																				22 MAR 79	
(SINGLE ENGINE																					
(FREE FLOW																				PAGE 2	
METEOROLOGY:																					
TEMP = 18 C																					
BAR PRESS = 766 M HG																					
REL HUMID = 65 %																					
ANGLE (DEGREES)																					
FREQ	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180		
(HZ)																					
25																					
31.5																					
40																					
50	64<	64<	64<	64<	66<	69<	69<	68<	67<	68<	68<	70<	72<	72<	68<	69<	68<	70<	69<		
63					66<	66<		65<	65<	65<	65<	68<	68<	68<	70<	66<					
80								66<	66<	66<	66<	68<	68<	67<	69<						
100								70<	71<	73<	74	74	74	75	66<						
125	65<	65<	68<	68<	69<	70<	67<	69<	70<	73<	75	77	78	77	75	69	58<	60<	63<		
150	68	70	75	72	72	72	70	73	75	73	76	77	78	77	75	69			65<		
200	65<	67	71	69	66	67	67	67	67	68	71	72	72	72	70	64<			60<		
250	66<	70	70	68	67	68	67	67	68	68	71	73	72	70	69	60<					
315	68	70	70	66	67	69	69	68	67	66	69	75	73	70	69	63<					
400	69	72	71	69	71	72	68	69	66	67	70	76	75	69	67	61<	57<	55<			
500	69	72	69	67	68	68	68	65<	63<	67	70	70	70	69	62<	60<					
630	72	74	72	69	70	70	68	65	63	64	64	70	70	69	64	60<			63<		
800	72	73	73	67	70	68	66	64	63	62	63	70	70	67	63	61	55<	53<	51<		
1000	70	70	71	66	68	66	64	62	61	61	63	67	66	65	63	60	54<	51<	52<		
1250	69	68	68	66	68	63	64	60<	62	60	63	64	64	64	64	62	53<	51<	52<		
1600	69	68	67	68	67	62	62	60	62	60	64	64	63	65	62	61	52<	49<	51<		
2000	70	71	72	72	71	67	65	66	66	63	63	66	70	69	63	63	56<	51<	50<		
2500	69	72	73	72	71	68	67	65	64	61	60	63	67	65	62	61	54<	50<	49<		
3150	73	77	77	75	73	72	69	66	64	62	62	61	65	65	62	61	54	50<	50<		
4000	72	74	73	71	70	68	66	63	60	58	59	60	61	61	57	57	50	45<	47<		
5000	82	81	83	83	81	77	75	71	69	68	66	66	67	67	66	66	59	54	56		
6300	78	80	81	79	77	75	71	68	67	65	64	64	65	65	63	63	55	51	53		
8000	72	74	75	73	72	70	66	64	62	60	60	61	61	61	58	57	48	44<	46<		
10000	66	68	67	66	65	63	60	56	54	54	57	58	60	56	54	50	42<	39<	40<		
OVERALL	85	87	88	87	86	84	82	80	80	80	82	84	85	84	82	78	73	74	74		
< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.																					

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: MEASURED SOUND PRESSURE LEVEL (09)																			
1/3 OCTAVE BAND																			
DISTANCE = 75 METERS																			
2																			
NOISE SOURCE/SUBJECT:																			
(OPERATION:																			
(F-16 AIRCRAFT																			
(F434-GE-400																			
(FAR FIELD NOISE																			
(FREQ																			
((HZ)																			
ANGLE (DEGREES)																			
	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
25	68<	69<	69<	67<	69<	68<	69<	72<	73<	72<	74<	78	80	84	88	89	89	89	89
31.5	71<	71<	69<	71<	73<	74<	77<	76<	77<	76<	79	81	84	88	93	96	93	96	93
40	71<	69<	71<	71<	73<	74<	77<	78	79	79	81	84	87	92	96	99	99	96	96
50	75	72<	75	77	77	77	79	79	81	81	83	84	89	95	99	103	98	103	98
63	77	75<	76	78	78	78	80	81	82	84	84	86	92	97	103	106	98	103	98
80	78	77	79	79	80	80	81	82	85	85	86	90	94	100	105	109	99	105	99
100	82	79	80	81	82	82	83	85	87	89	92	98	102	108	110	109	98	102	98
125	82	80	83	84	85	85	85	86	87	88	91	94	103	105	107	111	99	107	99
160	83	83	85	85	85	86	86	87	88	89	92	97	103	108	106	111	99	103	99
200	85	84	85	86	85	87	86	88	90	94	98	104	110	109	109	109	97	103	99
250	86	86	87	86	87	88	87	87	88	90	95	99	105	109	110	104	93	102	94
315	87	87	88	86	88	89	87	88	88	90	95	98	105	106	107	102	94	102	94
400	84	85	89	87	88	91	88	88	88	90	96	100	105	100	104	106	95	106	95
500	85	86	88	85	87	89	87	88	88	90	92	95	100	100	106	103	92	103	92
630	84	85	87	85	87	89	88	88	90	93	95	99	103	100	105	100	89	100	89
800	85	86	87	83	86	88	88	87	90	92	94	97	101	101	104	100	87	97	87
1000	83	84	86	82	85	87	87	86	89	91	93	96	97	101	103	97	87	97	87
1250	83	84	85	81	86	88	87	88	89	92	93	98	98	100	102	97	85	97	85
1600	83	84	85	81	87	90	89	92	91	93	94	99	99	98	100	96	85	96	85
2000	83	85	85	82	88	90	90	93	92	94	95	100	99	99	100	95	85	95	85
2500	84	86	86	84	87	88	89	90	91	93	94	99	97	100	98	95	83	95	83
3150	83	86	85	85	88	89	88	91	92	94	94	97	96	99	99	95	83	95	83
4000	79	81	81	80	84	85	85	86	87	89	90	92	91	94	94	92	78	92	78
5000	88	89	88	85	89	88	88	89	89	91	92	94	92	94	95	92	80	95	80
6300	84	85	85	83	86	86	86	86	88	88	89	91	89	92	93	88	76	93	88
8000	78	80	80	79	81	83	84	86	86	87	88	89	87	90	92	87	74	87	74
10000	74	76	76	74	76	78	79	81	82	84	84	86	84	86	88	82	69	82	69
OVERALL	97	98	99	97	99	101	100	102	102	104	106	110	114	116	118	119	108	119	108

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)																			
1/3 OCTAVE BAND																			
DISTANCE = 75 METERS																			
NOISE SOURCE/SUBJECT:																			
(OPERATION:)																			
(MILITARY POWER)																			
(94% RPM)																			
(SINGLE ENGINE)																			
(FREE FLOW)																			
F-10 AIRCRAFT																			
F404-GE-400																			
FAR FIELD NOISE																			
METEOROLOGY: TEMP = 18 C BAR PRESS = 766 M HG REL HUMID = 65 %																			
IDENTIFICATION: OMEGA 1.4 TEST AM-007-001 RUN 03 22 MAR 79 PAGE 2																			
FREQ (HZ)																			
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180																			
25	74<	74<	73<	76<	75<	77	77	79	79	81	81	84	87	91	95	98	97		
31.5	77<	80	78<	79	79	78<	82	83	83	84	85	86	92	99	100	103	99		
40	79	79	79	80	81	82	83	86	86	87	88	90	95	101	104	105	102		
50	80	80	80	83	84	83	86	86	86	90	87	90	93	98	104	108	109	105	
63	82	83	82	85	85	85	87	89	91	91	92	95	101	108	111	112	105		
80	84	85	85	87	88	88	88	91	93	92	94	98	104	111	116	116	107		
100	86	86	87	88	90	89	90	92	94	94	97	101	106	112	116	117	108		
125	89	89	90	91	92	92	92	94	95	95	99	104	110	114	115	118	107		
160	92	92	93	94	93	94	94	96	98	96	100	107	114	117	113	116	106		
200	93	94	95	94	93	94	94	95	95	97	101	108	115	120	115	114	106		
250	94	96	96	96	96	96	96	96	96	97	102	109	115	117	116	111	103		
315	93	96	98	97	98	98	98	97	98	97	99	104	111	117	113	115	110	98	
400	95	103	105	101	99	99	98	98	97	100	104	112	117	112	111	111	97		
500	103	105	106	102	101	101	99	98	96	99	105	112	117	113	110	109	95		
630	105	107	109	104	105	105	102	99	99	100	105	112	115	114	109	107	91		
800	101	106	108	103	106	108	105	102	100	101	105	112	112	113	109	106	90		
1000	97	102	104	99	102	106	105	102	101	100	103	110	110	112	107	104	89		
1250	95	101	102	96	101	104	102	101	102	102	102	107	109	111	105	102	90		
1600	93	100	99	94	100	103	103	102	101	105	104	107	109	110	106	101	88		
2000	92	98	98	94	101	102	104	104	102	104	105	106	110	110	105	101	88		
2500	89	95	96	93	100	101	103	102	102	101	104	105	107	109	104	101	86		
3150	89	95	96	93	99	100	102	102	101	102	104	105	107	108	104	100	85		
4000	83	90	91	88	94	96	98	98	98	97	100	103	103	104	98	97	80		
5000	83	90	92	88	94	95	99	98	99	99	100	104	104	105	100	98	82		
6300	80	87	89	86	91	93	96	96	96	95	97	101	101	102	98	94	79		
8000	78	86	87	83	90	93	95	95	96	94	97	100	101	102	97	94	78		
10000	74	80	83	78	85	88	91	91	91	91	93	97	99	99	95	90	74		
OVERALL	110	113	115	111	113	114	113	112	112	113	116	121	125	126	125	125	116		
< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.																			

< LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)																
1/3 OCTAVE BAND																
DISTANCE = 75 METERS																
NOISE SOURCE/SUBJECT:																
(OPERATION:) METEOROLOGY: = 18 C																
(AFTERBURNER POWER) TEMP																
(MINIMUM SETTING) GAP PRESS = .766 M HG																
(SINGLE ENGINE) REL HUMID = 65 %																
(FREE FLOW)																
FREQ	ANGLE (DEGREES)															
(HZ)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
25	82	81	81	81	81	82	81	84	85	86	87	90	95	99	102	104
31.5	83	84	83	85	84	85	86	88	90	90	89	94	99	103	105	108
40	83	85	84	85	87	88	89	91	92	92	93	96	101	106	109	110
50	86	86	87	87	89	89	90	91	94	94	94	99	105	110	112	114
63	88	88	88	90	90	92	91	93	95	96	96	101	108	113	116	115
80	90	89	90	92	93	94	94	95	97	98	100	104	112	117	119	116
100	92	91	93	94	94	94	94	97	98	99	101	106	113	118	121	115
125	94	93	95	97	96	97	96	99	100	101	103	110	115	115	121	117
160	96	95	96	98	97	98	99	100	102	102	105	112	120	118	118	110
200	98	97	98	99	99	99	99	100	101	103	105	113	121	119	116	115
250	97	98	99	99	100	101	101	102	102	104	106	114	122	113	114	108
315	96	99	101	100	101	103	101	102	102	104	109	116	122	115	111	108
400	96	100	104	100	102	103	101	101	101	104	109	116	122	116	109	107
500	100	102	104	101	103	104	102	102	103	104	109	116	122	116	109	107
630	104	105	106	102	106	107	104	103	104	104	109	114	120	116	109	104
800	99	104	106	102	106	107	107	105	105	105	108	112	118	115	109	103
1000	97	101	103	99	103	106	105	106	105	105	107	109	115	113	108	103
1250	95	99	100	98	104	104	103	104	106	106	107	109	113	111	106	103
1600	95	98	99	98	105	104	104	105	106	108	109	109	113	110	106	104
2000	93	97	98	98	105	103	105	106	106	108	109	109	113	111	107	104
2500	91	94	96	96	103	102	104	105	105	106	107	108	111	110	106	102
3150	90	94	96	96	103	103	104	104	105	105	107	108	111	110	106	102
4000	85	90	91	92	98	98	99	100	101	101	101	103	106	106	101	98
5000	85	90	92	92	98	98	98	100	101	101	103	104	108	108	102	98
6300	82	86	89	89	96	96	98	98	99	100	100	102	106	105	99	95
8000	80	84	88	87	94	95	97	98	98	99	100	101	106	105	98	94
10000	74	79	82	83	90	91	93	94	94	96	97	99	104	103	95	91
OVERALL	109	112	113	111	115	116	115	116	116	117	120	124	131	128	128	125

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

TABLE: MEASURED SOUND PRESSURE LEVEL (DB)																
1/3 OCTAVE BAND																
DISTANCE = 75 METERS																
NOISE SOURCE/SUBJECT:																
(OPERATION:) METEOROLOGY:)																
(AFTERBURNER POWER) TEMP = 10 C)																
(MAXIMUM) BAR PRESS = .766 M HG)																
(SINGLE ENGINE) REL HUMID = 65 %)																
(FREE FLOW))																
F-18 A/CRAFT																
FA04-GE-400																
FAR FIELD NOISE																
FREQ (HZ)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150
25	87	87	88	87	88	88	89	90	90	90	91	94	100	105	107	107
31.5	88	91	90	89	89	90	93	94	94	94	95	99	104	109	111	111
40	89	89	90	90	93	94	95	95	97	96	97	101	107	113	115	103
50	91	91	92	92	95	94	96	97	98	97	100	104	112	116	118	113
63	93	92	93	95	96	95	97	98	99	99	103	108	116	121	120	115
80	94	94	96	97	97	97	99	100	102	102	105	110	120	124	122	117
100	96	96	98	99	98	98	99	101	102	103	106	113	121	125	123	117
125	98	98	100	100	100	101	102	102	105	105	109	115	121	124	123	118
160	99	100	101	101	101	102	102	104	105	106	111	119	123	121	122	117
200	100	100	103	102	102	103	103	104	105	106	112	122	127	121	119	116
250	101	104	103	103	103	104	104	104	104	106	112	121	127	121	116	113
315	100	102	104	103	105	105	106	105	106	108	113	123	125	116	115	109
400	99	103	106	104	105	106	105	105	105	109	114	122	127	113	112	108
500	102	106	108	104	106	106	106	105	106	109	114	122	126	115	111	107
630	105	106	108	105	109	109	108	105	107	109	112	120	124	114	110	106
800	101	103	106	104	110	108	109	107	108	109	112	118	122	114	109	106
1000	99	102	104	102	107	105	107	109	108	109	112	117	120	112	109	104
1250	98	102	103	100	107	106	106	110	110	110	113	117	119	112	108	103
1600	98	102	102	99	105	108	108	109	109	112	113	116	116	112	108	104
2000	96	100	101	98	105	108	109	109	108	111	113	115	115	111	109	103
2500	93	98	99	97	104	106	107	108	107	108	110	114	114	109	107	102
3150	94	98	99	97	103	105	107	108	108	109	110	113	114	110	106	101
4000	89	94	95	93	99	101	103	103	103	104	105	108	111	105	102	97
5000	88	94	95	93	99	102	103	105	104	105	108	110	113	106	103	98
6300	85	92	92	90	97	99	101	102	102	103	104	108	110	104	100	94
8000	84	90	91	89	96	99	101	102	101	103	103	108	109	104	100	93
10000	78	85	85	84	92	95	97	99	98	100	101	106	108	102	98	90
OVERALL	112	114	116	114	118	118	119	119	119	121	124	131	135	132	131	126

LEVEL CORRECTED TO REMOVE BACKGROUND/ELECTRONIC NOISE.

FIGURE 1: NORMALIZED FARFIELD NOISE LEVELS

2 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:

OPERATION:

IDENTIFICATION:

OMEGA 1-4

TEST AM-007-001

RUN 01

22 MAR 79

PAGE 6

METEOROLOGY:

TEMP = 15 C

BAR PRESS = .760 M HG

REL HUMID = 70 %

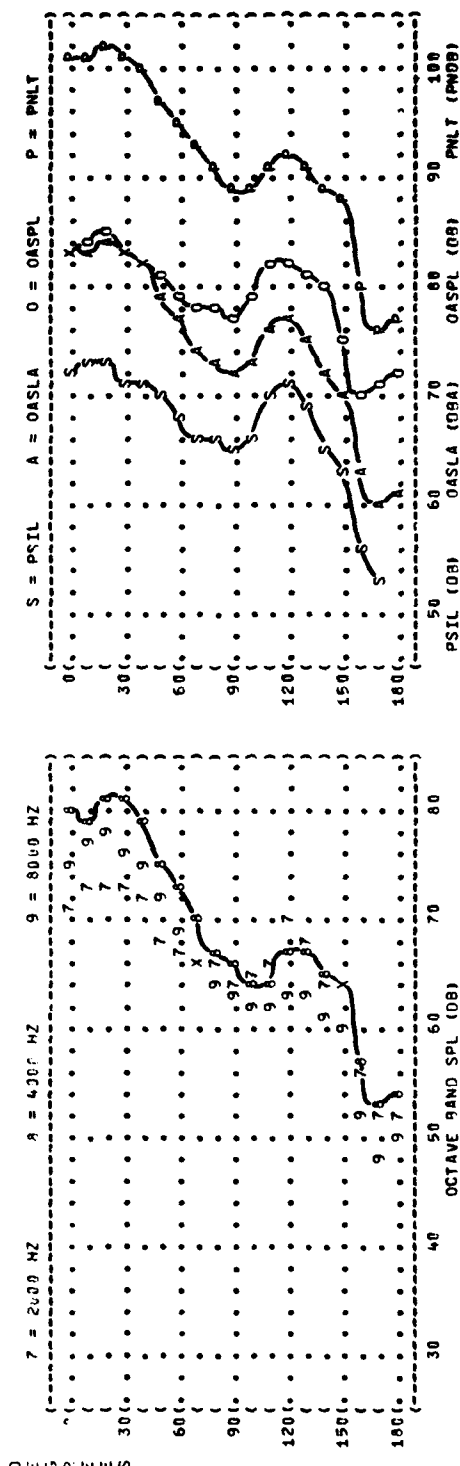
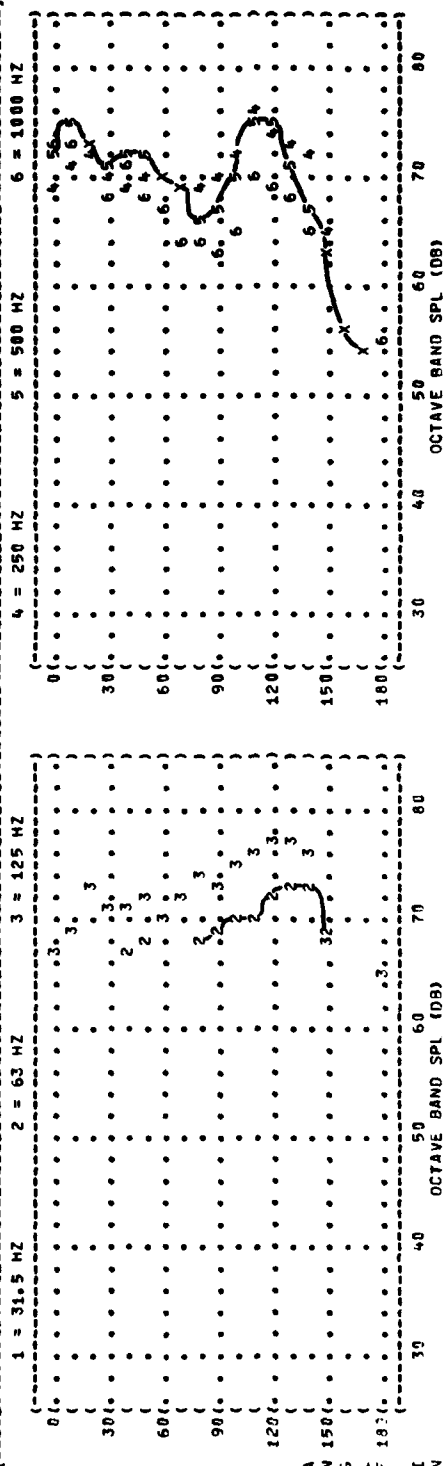


FIGURE: NORMALIZED FARFIELD NOISE LEVELS

2 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:

F-10 AIRCRAFT

F404-GE-400

FAR FIELD NOISE

OPERATION:

85% RPM

SINGLE ENGINE

FREE FLOW

METEOROLOGY:

TEMP = 15 C

BAR PRESS = 760 MM HG

REL HUMID = 70 %

PAGE 6

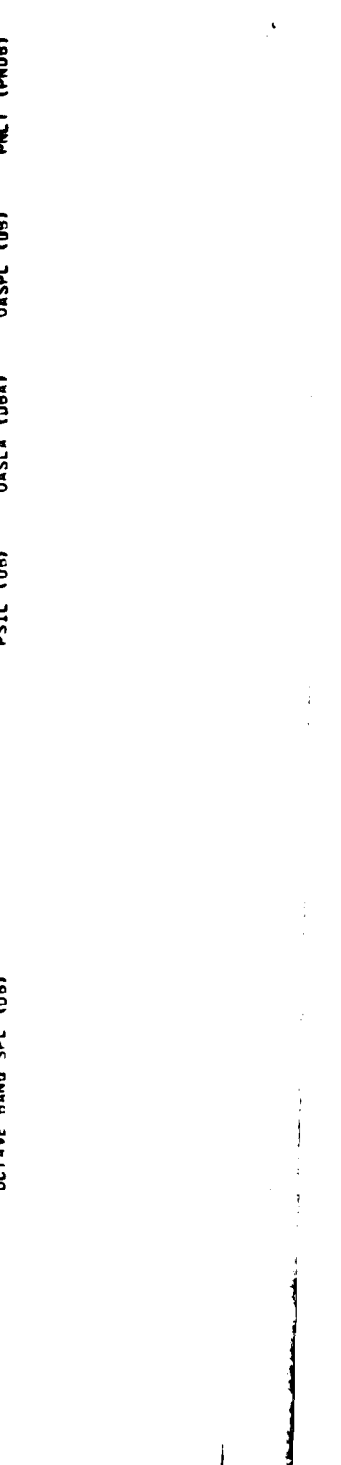
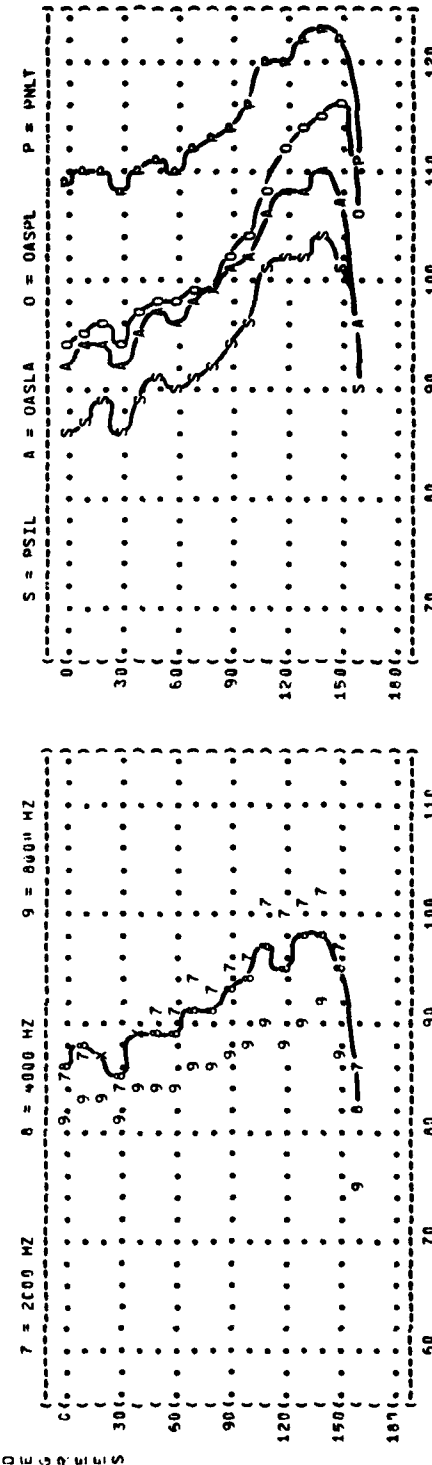
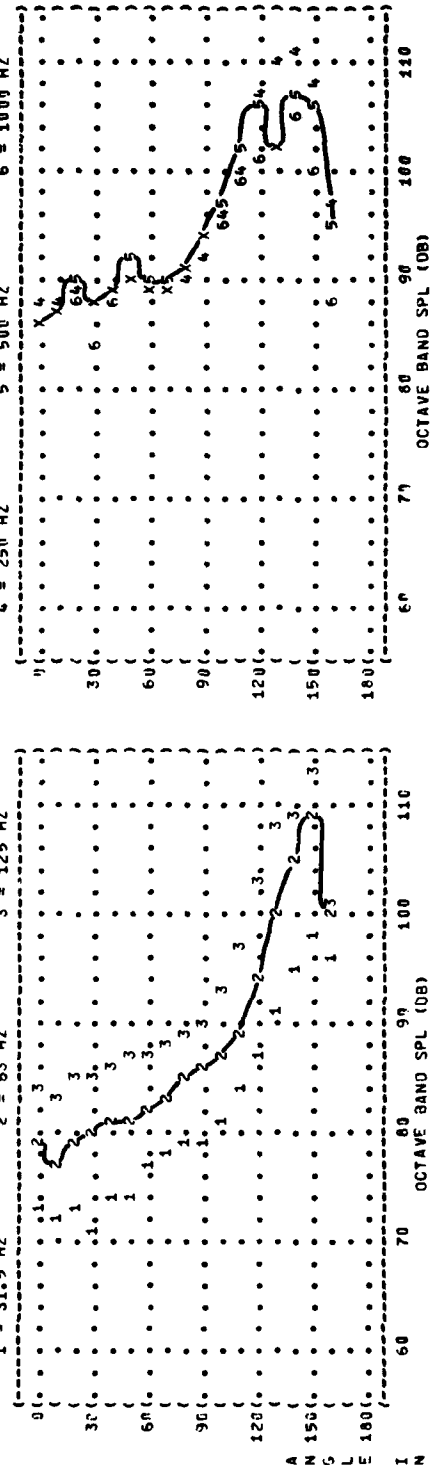
IDENTIFICATION:

OMEGA 1.4

TEST AM-007-001

RUN 02

22 MAR 79



(FIGURES NORMALIZED FARFIELD NOISE LEVELS)
 (2 DISTANCE = 100 METERS)
 (NOISE SOURCE/SUBJECT:)
 (F-10 AIRCRAFT)
 (F404-GE-400)
 (FAR FIELD NOISE)
 (OPERATION:)
 (MILITARY POWER)
 (94% RPM)
 (SINGLE ENGINE)
 (FREE FLOW)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 H MG)
 (REL HUMID = 70 %)
 (IDENTIFICATIONS)
 (OMEGA 1.4)
 (TEST AM-007-001)
 (RUN 03)
 (22 MAR 79)
 (PAGE 6)

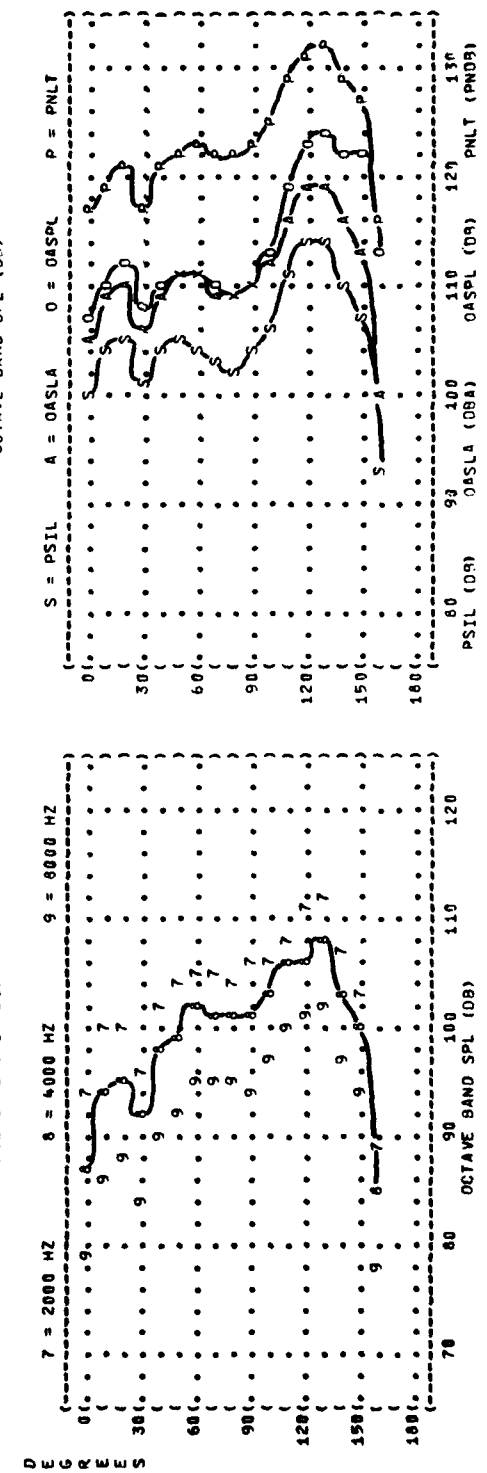
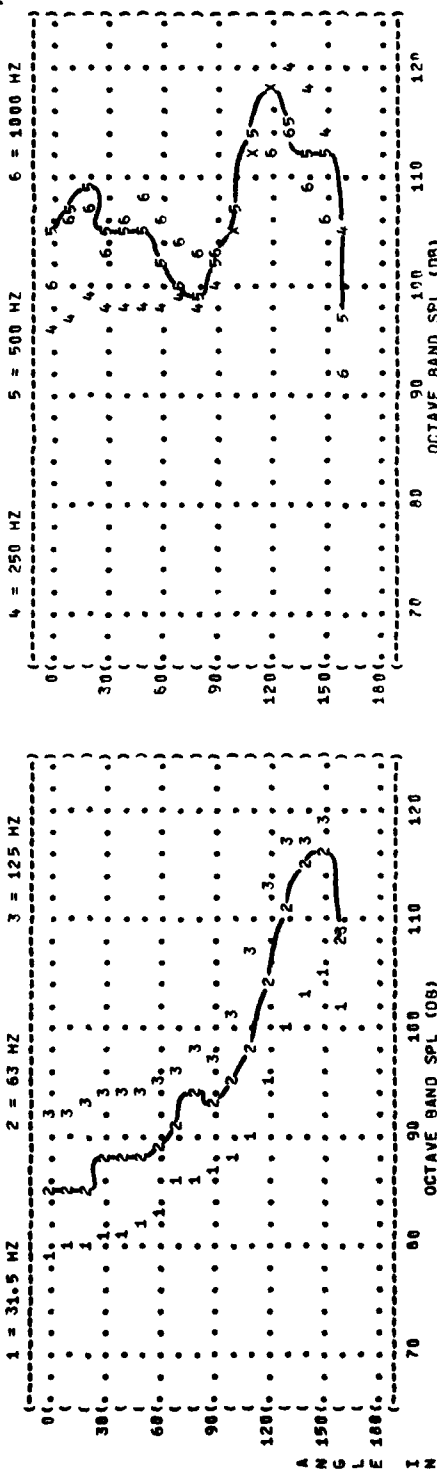


FIGURE 1 NORMALIZED FARFIELD NOISE LEVELS

2 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT

F-16 AIRCRAFT

F47-GE-400

FAR FIELD NOISE

OPERATION:

AFTERBURNER POWER

MINIMUM SETTING

SINGLE ENGINE

FREE FLOW

METEOROLOGY:

TEMP = 15 C

BAR PRESS = .760 M HG

REL HUMID = 73 %

IDENTIFICATION:

OMEGA 1.4

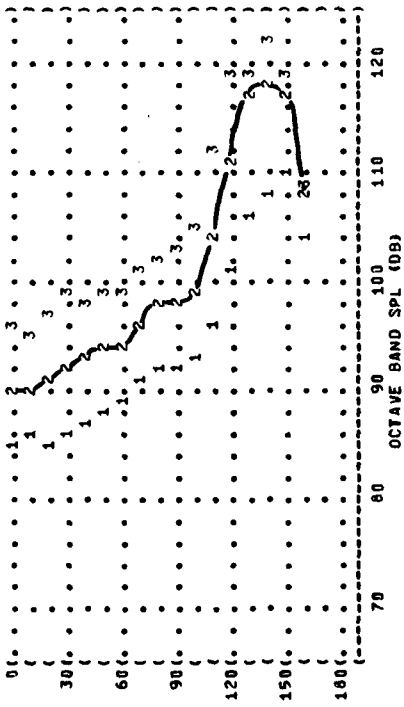
TEST AM-007-001

RUN 04

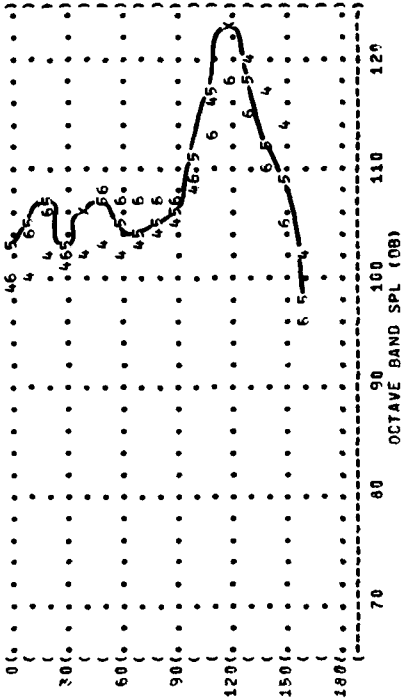
22 MAR 79

PAGE 6

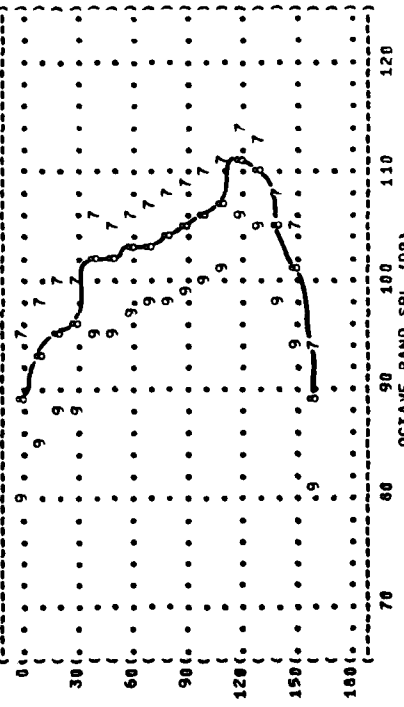
1 = 31.5 HZ 2 = 63 HZ 3 = 125 HZ



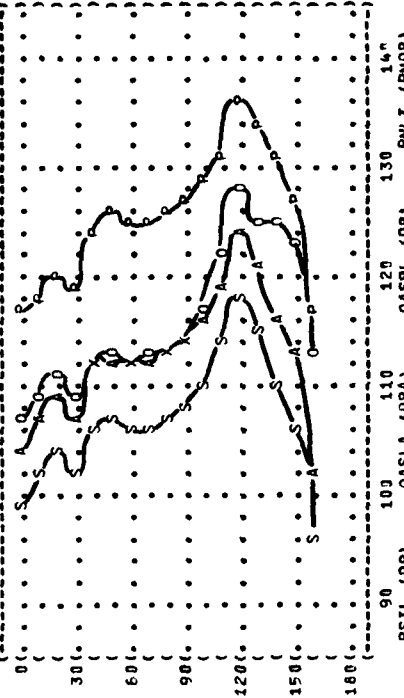
4 = 250 HZ 5 = 500 HZ 6 = 1000 HZ



7 = 2000 HZ 8 = 4000 HZ 9 = 8000 HZ



S = PSIL A = OASLA O = OASPL P = PNLT



PSIL (DB) OASLA (DBA) OASPL (DB) PNLT (PNDB)

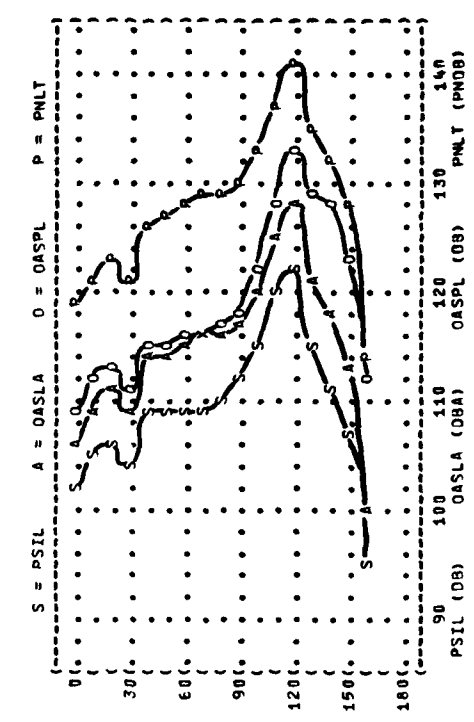
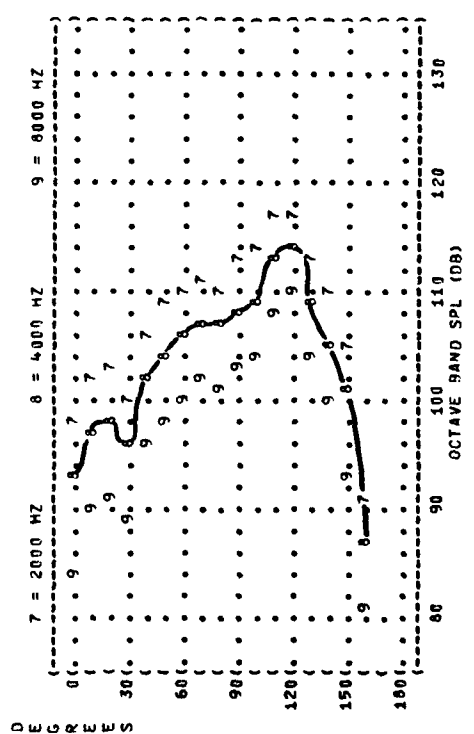
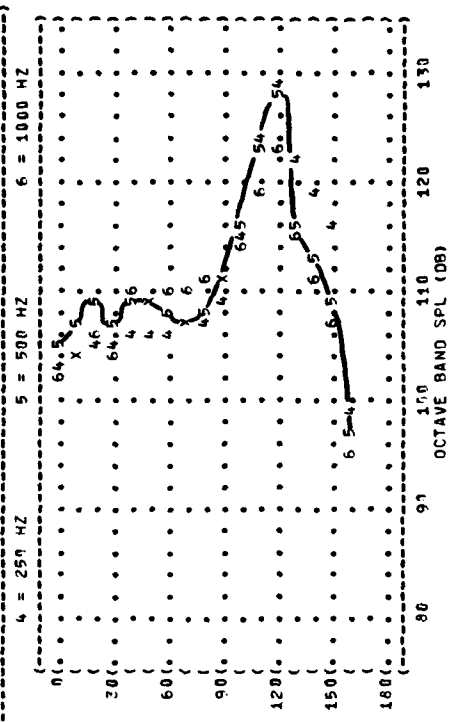
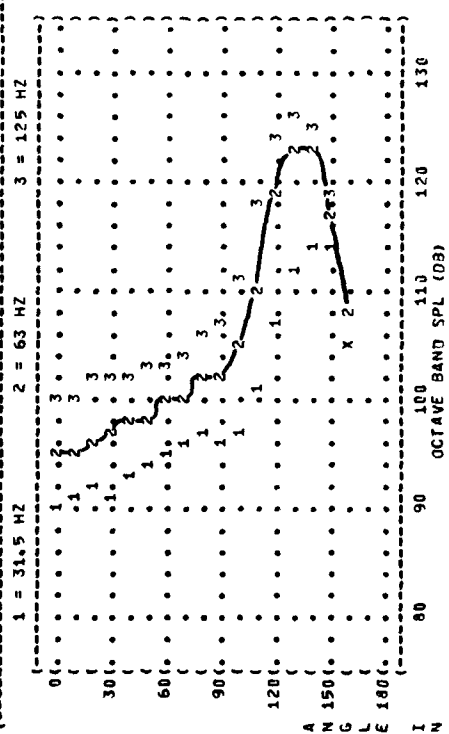
) IDENTIFICATION:
) OMEGA 1.4
) TEST AM-007-001
) RUN 05
) METEOROLOGY:
) TEMP = 15 C
) BAR PRESS = .760 W HG
) REL HUMID = 70 %
) 22 MAR 79
) PAGE 6

FIGURE 1 NORMALIZED FARFIELD NOISE LEVELS

2 DISTANCE = 100 METERS

NOISE SOURCE/SUBJECT:

F-18 AIRCRAFT
 F404-G2-400
 FAR FIELD NOISE
 OPERATION:
 AFTERBURNER POWER
 MAXIMUM
 SINGLE ENGINE
 FREE FLOW



PSIL (DB) 90 100 110 120 130 140
 OASPL (DBA) 90 100 110 120 130 140
 OASPL (DB) 90 100 110 120 130 140
 PNLTY (PNDB) 90 100 110 120 130 140

FIGURE: ACOUSTIC POWER LEVEL (PNL)

3

IDENTIFICATION:

OMEGA 1.4

TEST 44-007-001

RUN 01

22 MAR 79

PAGE 3

NOISE SOURCE/SUBJECT:

OPERATION:

IDLE POWER

63% RPM

SINGLE ENGINE

FREE FLOW

METEOROLOGY:

TEMP = 18 C

BAR PRESS = .766 M HG

REL HUMID = 65 %

F-18 AIRCRAFT

F414-GE-400

FAR FIELD NOISE

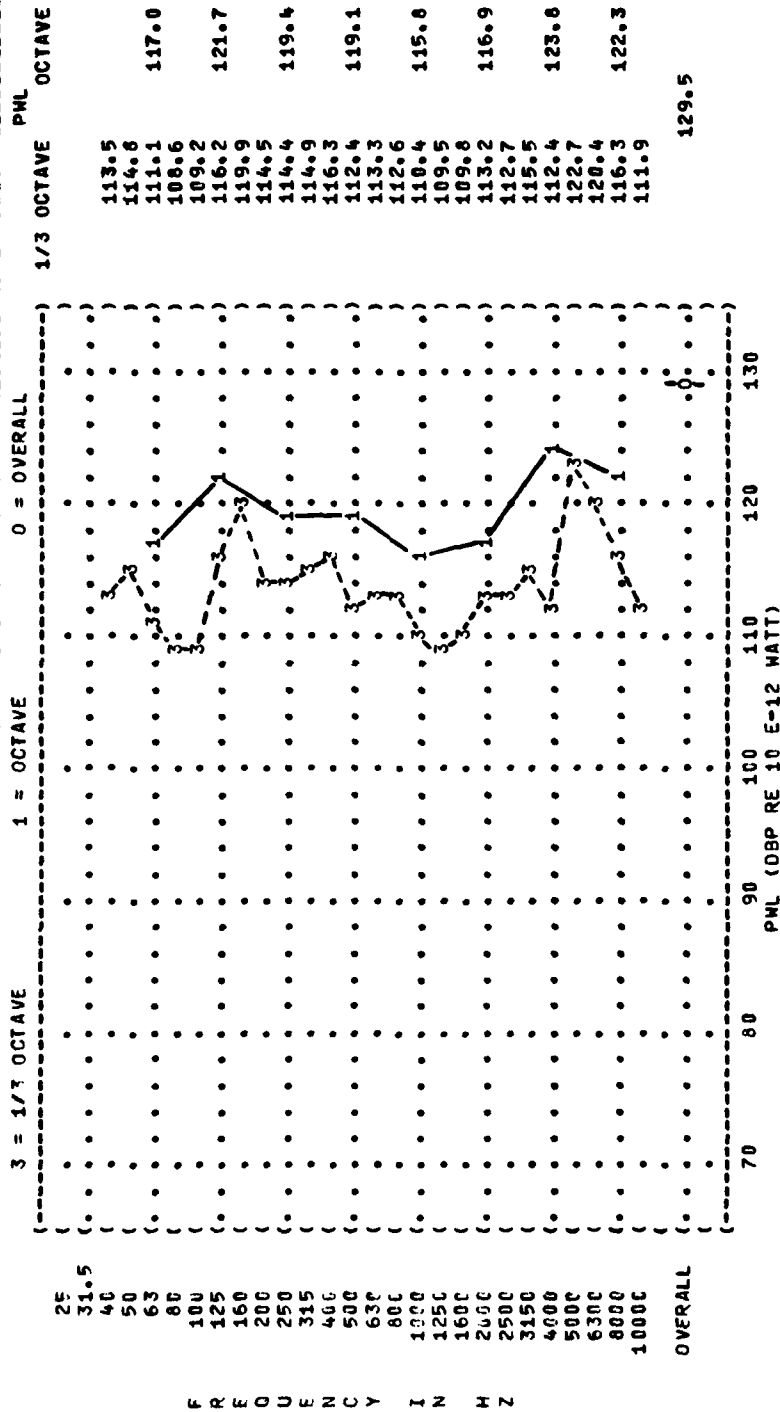


FIGURE 1: ACOUSTIC POWER LEVEL (PWL)

3

NOISE SOURCE/SUBJECT: F-18 AIRCRAFT
 F484-GE-488
 FAR FIELD NOISE

OPERATION: 85% RPM
 SINGLE ENGINE
 FREE FLOW

METEOROLOGY: TEMP = 18 C
 BAR PRESS = .766 M HG
 REL HUMID = 65 %

IDENTIFICATION: OMEGA 1.4
 TEST AM-007-001
 RUN 02
 22 MAR 79
 PAGE 3

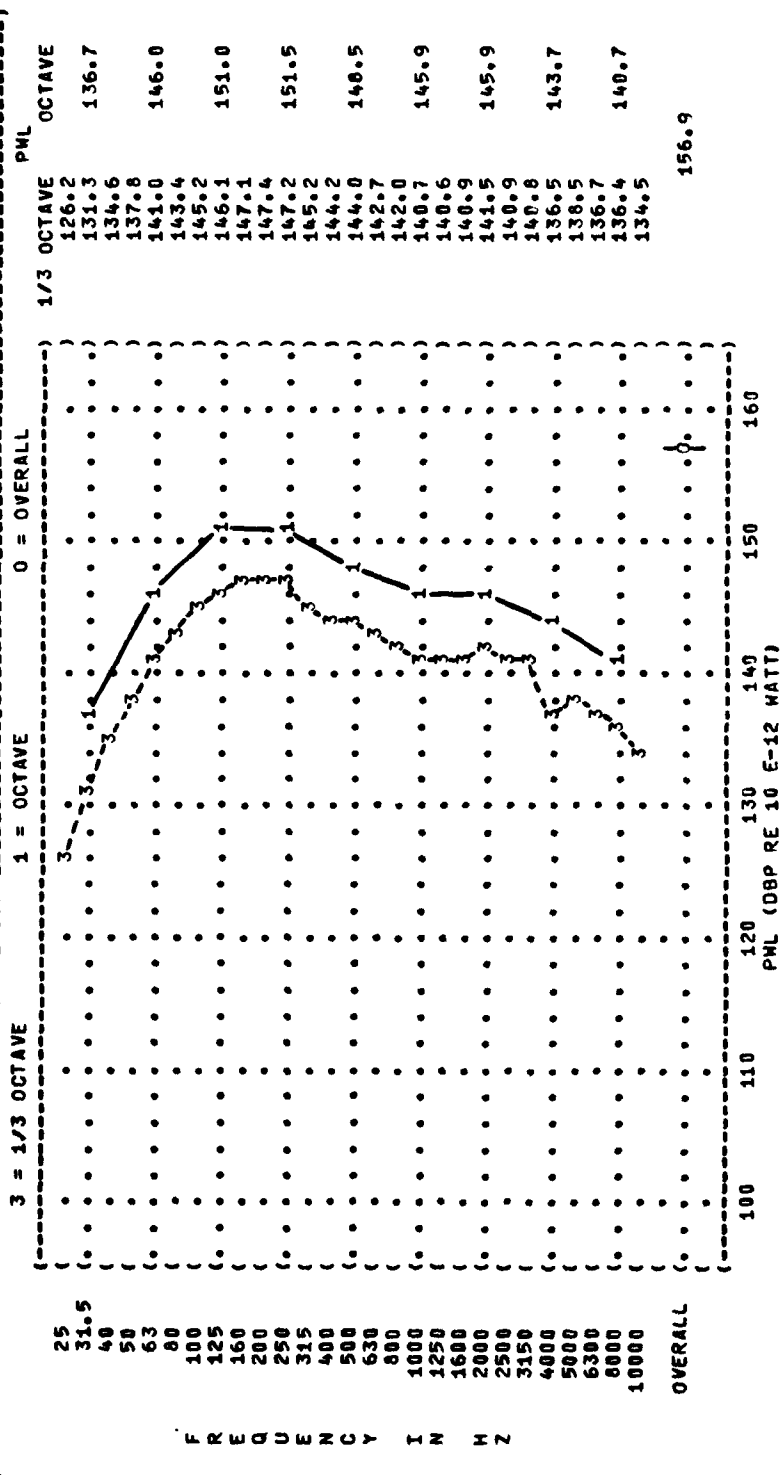


FIGURE: ACOUSTIC POWER LEVEL (PNL)
 3
 NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY:)
 ((MILITARY POWER) TEMP = 18 C)
 ((94% RPM) BAR PRESS = .766 M HG)
 ((SINGLE ENGINE) REL HUMID = 65 %)
 ((FREE FLOW))
 F-18 AIRCRAFT
 F404-GE-400
 FAR FIELD NOISE
 IDENTIFICATION:)
)
) OMEGA 1.4
) TEST AM-007-001
) RUN 03
) 22 MAR 79
) PAGE 3

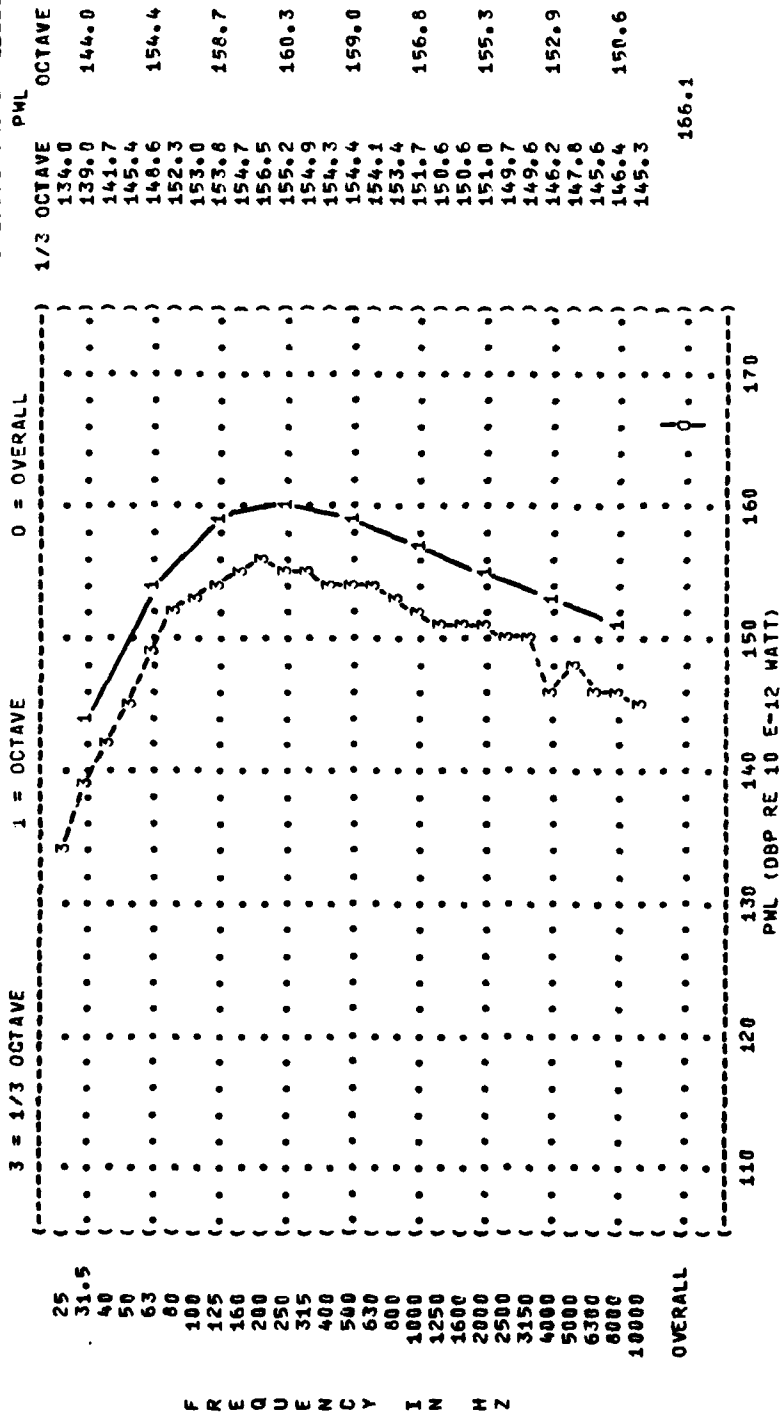
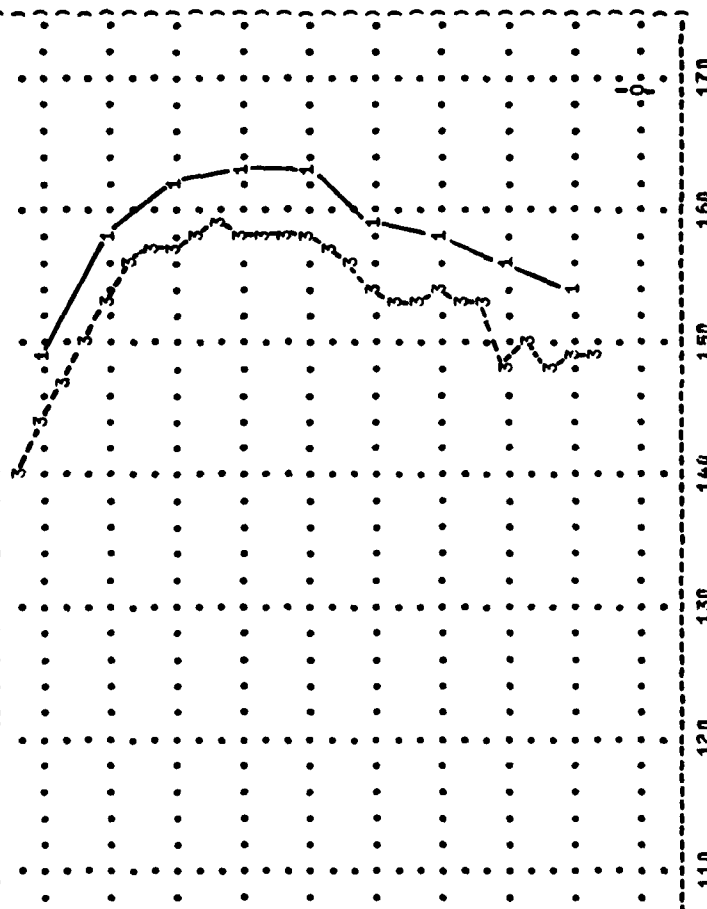


FIGURE: ACOUSTIC POWER LEVEL {PNL}



(FIGURE: ACOUSTIC POWER LEVEL (PWL))
 (3)
 () IDENTIFICATION:)
 ())
 () OMEGA 1.4)
 () TEST AM-007-001)
 () RUN 05)
 (NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY:)
 ((AFTERBURNER POWER) TEMP = 18 C)
 ((MAXIMUM) BAR PRESS = .766 M HG)
 ((SINGLE ENGINE) REL HUMID = 65 %)
 ((FREE FLOW))
 () PAGE 3)

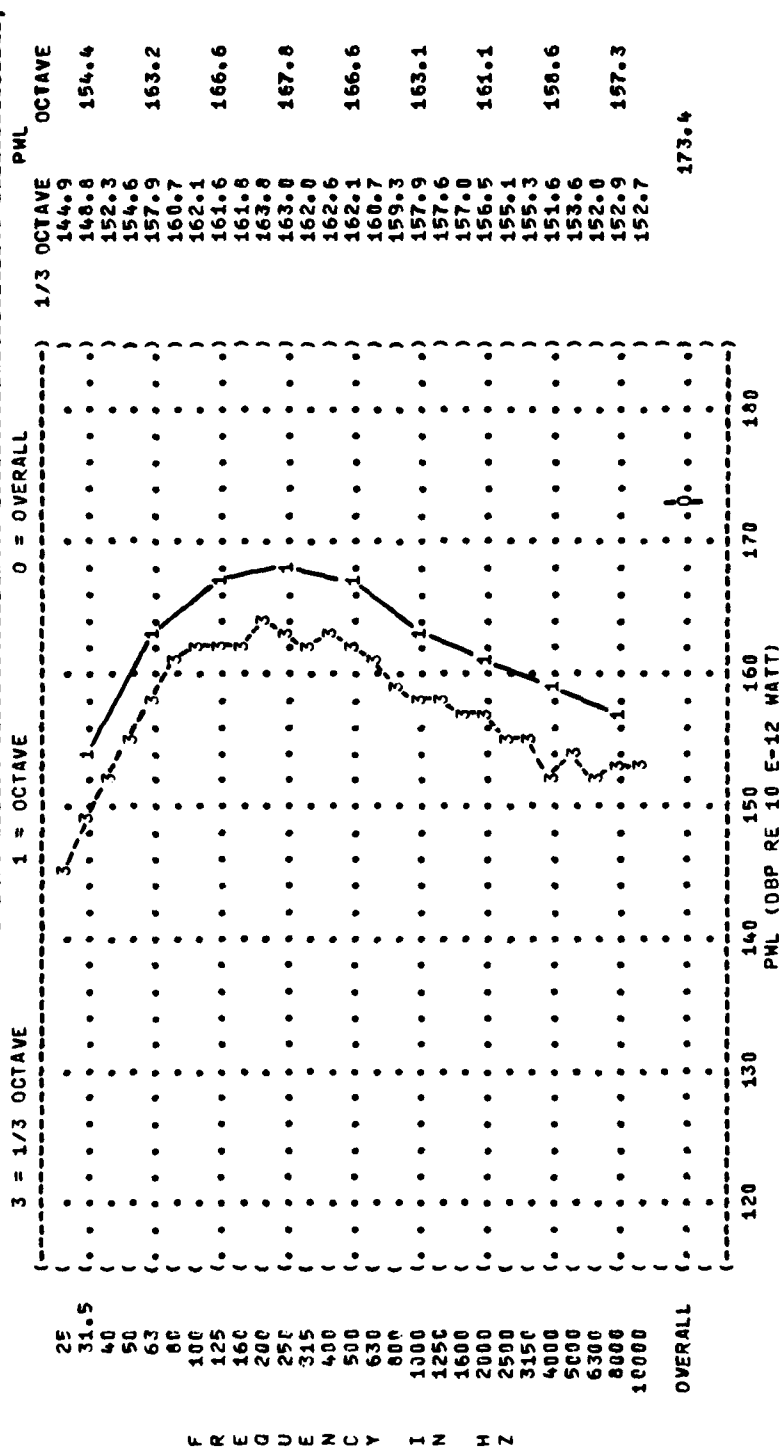


TABLE: DIRECTIVITY INDEX (DB)		IDENTIFICATION:																		
3																				
NOISE SOURCE/SUBJECT:		METEOROLOGY:																		
F-18 AIRCRAFT		TEMP = 18 C																		
F404-GE-400		BAR PRESS = .766 M HG																		
FAR FIELD NOISE		REL HUMID = 65 %																		
FREQ		PAGE 4																		
(HZ)																				
0		ANGLE (DEGREES)																		
10																				
20																				
30																				
40																				
50																				
60																				
70																				
80																				
90																				
100																				
110																				
120																				
130																				
140																				
150																				
160																				
170																				
180																				
1/3 OCTAVE																				
25																				
31.5																				
40																				
50																				
63																				
80																				
100																				
125																				
160																				
200																				
250																				
315																				
400																				
500																				
630																				
800																				
1000																				
1250																				
1600																				
2000																				
2500																				
3150																				
4000																				
5000																				
6300																				
8000																				
10000																				
OCTAVE																				
31.5																				
63																				
125																				
250																				
500																				
1000																				
2000																				
4000																				
8000																				
OVERALL																				

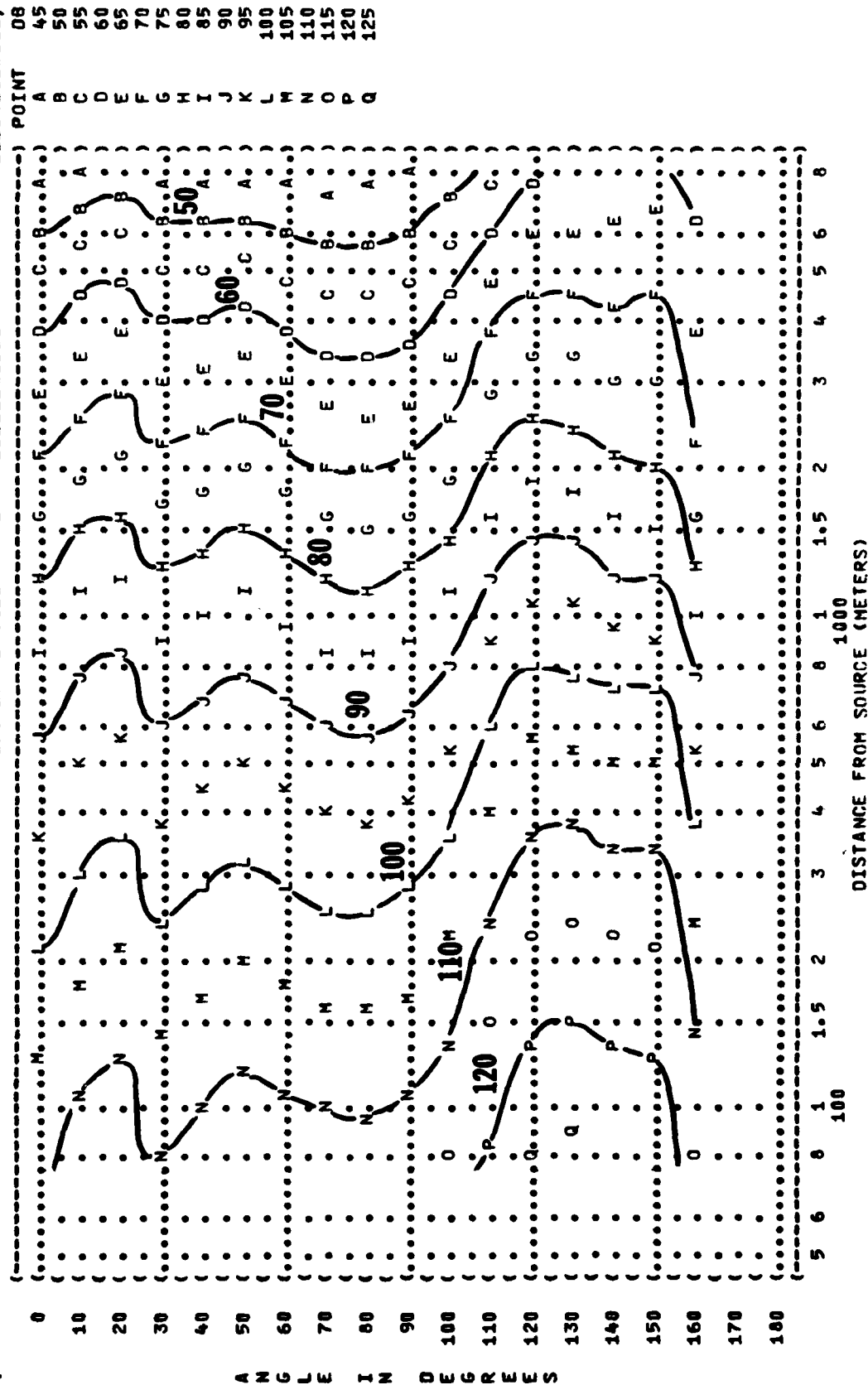
TABLE: DIRECTIVITY INDEX (DB)																		
IDENTIFICATION:																		
3																		
NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY: TEMP = 18 C																		
F-18 AIRCRAFT (85% RPM) BAR PRESS = .766 M HG																		
F404-GE-400 (SINGLE ENGINE) REL HUMID = 65 %																		
FAR FIELD NOISE (FREE FLOW)																		
FREQ																		
(HZ)																		
ANGLE (DEGREES)																		
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180																		
1/3 OCTAVE																		
25																		
31.5																		
40																		
50																		
63																		
80																		
100																		
125																		
160																		
200																		
250																		
315																		
400																		
500																		
630																		
800																		
1000																		
1250																		
1600																		
2000																		
2500																		
3150																		
4000																		
5000																		
6300																		
8000																		
10000																		
OCTAVE																		
31.5																		
63																		
125																		
250																		
500																		
1000																		
2000																		
4000																		
8000																		
OVERALL																		

TABLE: DIRECTIVITY INDEX (DB)																
IDENTIFICATION:																
3																
NOISE SOURCE/SUBJECT:																
F-16 AIRCRAFT																
F404-GE-400																
FAR FIELD NOISE																
FREQ																
(HZ)																
ANGLE (DEGREES)																
1/3 OCTAVE																
25	-15	-14	-16	-13	-14	-12	-10	-10	-8	-8	-5	-2	2	6	9	8
31.5	-16	-14	-15	-15	-15	-16	-12	-10	-11	-9	-6	-2	5	6	9	5
40	-18	-18	-17	-16	-16	-14	-13	-11	-10	-9	-6	-1	4	7	9	6
50	-20	-20	-17	-17	-18	-15	-14	-11	-13	-10	-7	-3	4	8	9	4
63	-21	-20	-21	-18	-18	-16	-15	-12	-13	-11	-8	-2	5	8	9	2
80	-23	-22	-22	-20	-19	-19	-16	-14	-15	-13	-9	-3	4	8	9	0
100	-22	-22	-21	-19	-18	-19	-16	-14	-14	-11	-7	-2	5	8	9	1
125	-20	-20	-18	-17	-17	-17	-16	-14	-13	-10	-4	1	5	7	9	-2
160	-18	-18	-17	-16	-17	-15	-14	-12	-13	-10	-3	4	8	4	6	-4
200	-18	-18	-16	-17	-18	-17	-16	-16	-14	-10	-3	4	9	4	3	-6
250	-16	-14	-14	-14	-14	-14	-14	-14	-13	-8	-1	5	7	6	1	-7
315	-16	-14	-12	-13	-12	-12	-12	-12	-11	-6	2	8	4	6	0	-11
400	-14	-6	-4	-8	-10	-10	-11	-11	-12	-9	-5	3	3	2	2	-12
500	-6	-4	-3	-7	-8	-8	-10	-11	-13	-10	-4	3	8	4	0	-14
630	-4	-1	0	-4	-4	-4	-7	-10	-8	-4	3	6	5	5	1	-2
800	-7	-2	0	-5	-2	0	-3	-6	-7	-3	4	4	5	1	-2	-18
1000	-9	-4	-2	-7	-4	0	-1	-4	-5	-6	3	4	6	1	-2	-17
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4000	-16	-9	-8	-11	-6	-4	-1	-2	-2	0	3	3	5	5	-1	-3
5000	-17	-10	-8	-12	-6	-5	-1	-2	-2	0	4	4	5	5	0	-2
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8000	-19	-11	-10	-14	-7	-4	-2	-1	-3	0	3	4	5	5	0	-3
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OCTAVE																
31.5	-17	-16	-17	-15	-15	-14	-13	-11	-10	-9	-6	-1	4	7	9	6
63	-22	-21	-22	-19	-19	-19	-17	-16	-13	-14	-12	-9	-3	4	8	1
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8000	-18	-11	-9	-13	-7	-5	-2	-2	-1	-3	0	3	4	5	0	-3
OVERALL	-11	-7	-6	-10	-8	-6	-7	-8	-8	-7	-5	1	5	6	4	-5

TABLE: DIRECTIVITY INDEX (DB)																			
IDENTIFICATION:																			
3																			
NOISE SOURCE/SUBJECT:																			
F-16 AIRCRAFT																			
F404-GE-400																			
FAR FIELD NOISE																			
OPERATION:																			
AFTERBURNER POWER																			
MINIMUM SETTING																			
SINGLE ENGINE																			
FREE FLOW																			
METEOROLOGY:																			
TEMP = 18 C																			
BAR PRESS = .766 M HG																			
REL HUMID = 65 %																			
PAGE 4																			
FREQ	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
(HZ)																			
1/3 OCTAVE																			
25	-14	-14	-15	-14	-15	-13	-14	-11	-11	-9	-8	-6	-1	4	7	9	4		
31.5	-16	-15	-16	-14	-15	-14	-12	-10	-9	-9	-9	-4	0	4	7	9	5		
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315	-16	-14	-12	-13	-12	-10	-12	-11	-10	-9	-6	2	9	2	2	-2	-5	-16	
400	-17	-13	-9	-13	-10	-9	-11	-12	-12	-9	-4	3	9	3	3	-4	-6	-17	
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630	-8	-7	-6	-10	-6	-5	-8	-9	-8	-3	-2	2	8	4	4	-3	-8	-17	
800	-11	-6	-5	-9	-5	-3	-4	-5	-6	-5	-2	2	8	4	4	-1	-7	-16	
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TABLE: DIRECTIVITY INDEX (DB)																	IDENTIFICATION:	
3																		
NOISE SOURCE/SUBJECT:																		
(OPERATION:																		
(AFTERBURNER POWER																		
(MAXIMUM																		
(SINGLE ENGINE																		
(FREE FLOW																		
FREQ																		
(MHZ)																		
ANGLE (DEGREES)																		
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180																		
1/3 OCTAVE																		
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OCTAVE																		
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OCTAVE																		
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OCTAVE																		
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OCTAVE																		
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OCTAVE																		
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OCTAVE																		
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63	-20	-21	-19	-18	-17	-18	-16	-15	-13	-10	-5	4	6	7	2	-7</		


```
(-----)
( FIGURE: OVERALL SOUND PRESSURE LEVEL (OASPL) )
(      4      EQUAL LEVEL CONTOURS (DB) )
( )
( )
( ) OMEGA 1.4 )
( ) TEST AM-007-001 )
( ) RUN 03 )
( ) METEOROLOGY: )
( ) TEMP = 15 C )
( ) BAR PRESS = .760 M HG )
( ) REL HUMID = 70 % )
( ) FREE FLOW )
( ) PAGE 13 )
(-----)
```



```

( ) FIGURE : OVERALL SOUND PRESSURE LEVEL (OASPL)
( ) EQUAL LEVEL CONTOURS (DB)
( ) 4
( ) NOISE SOURCE/SUBJECT : ( OPERATION: ) METEOROLOGY:
( ) F-10 AIRCRAFT ( AFTERBURNER POWER ) TEMP = 15 C
( ) F404-GE-400 ( MINIMUM SETTING ) BAR PRESS = .760 M HG
( ) FAR FIELD NOISE ( SINGLE ENGINE ) REL HUMID = 70 %
( ) ( FREE FLOW ) PAGE 13
( ) IDENTIFICATION:
( ) OMEGA 1.4
( ) TEST AM-007-001
( ) RUN 04
( ) 22 MAR 79

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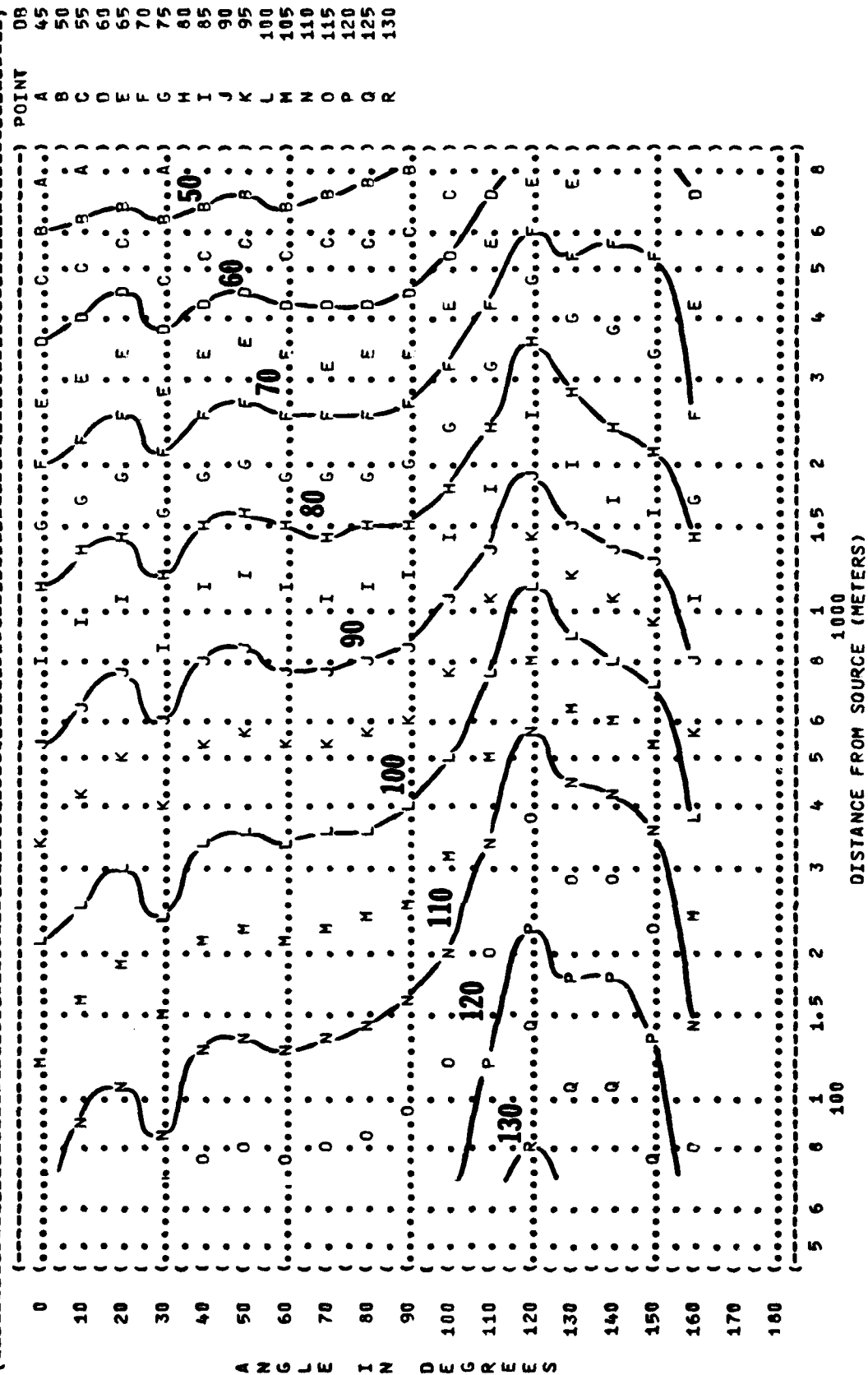


FIGURE: C-WEIGHTED OVERALL SOUND LEVEL (OASLC)
 5
 IDENTIFICATION:
 NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY:)
 (IDLE POWER) TEMP = 15 C
 (63% RPM) BAR PRESS = .760 M HG
 (SINGLE ENGINE) REL HUMID = 70 %
 (FREE FLOW)
 F-16 AIRCRAFT
 F4J4-GE-400
 FAR FIELD NOISE
 TEST AM-007-001
 RUN 01
 22 MAR 79
 PAGE 14

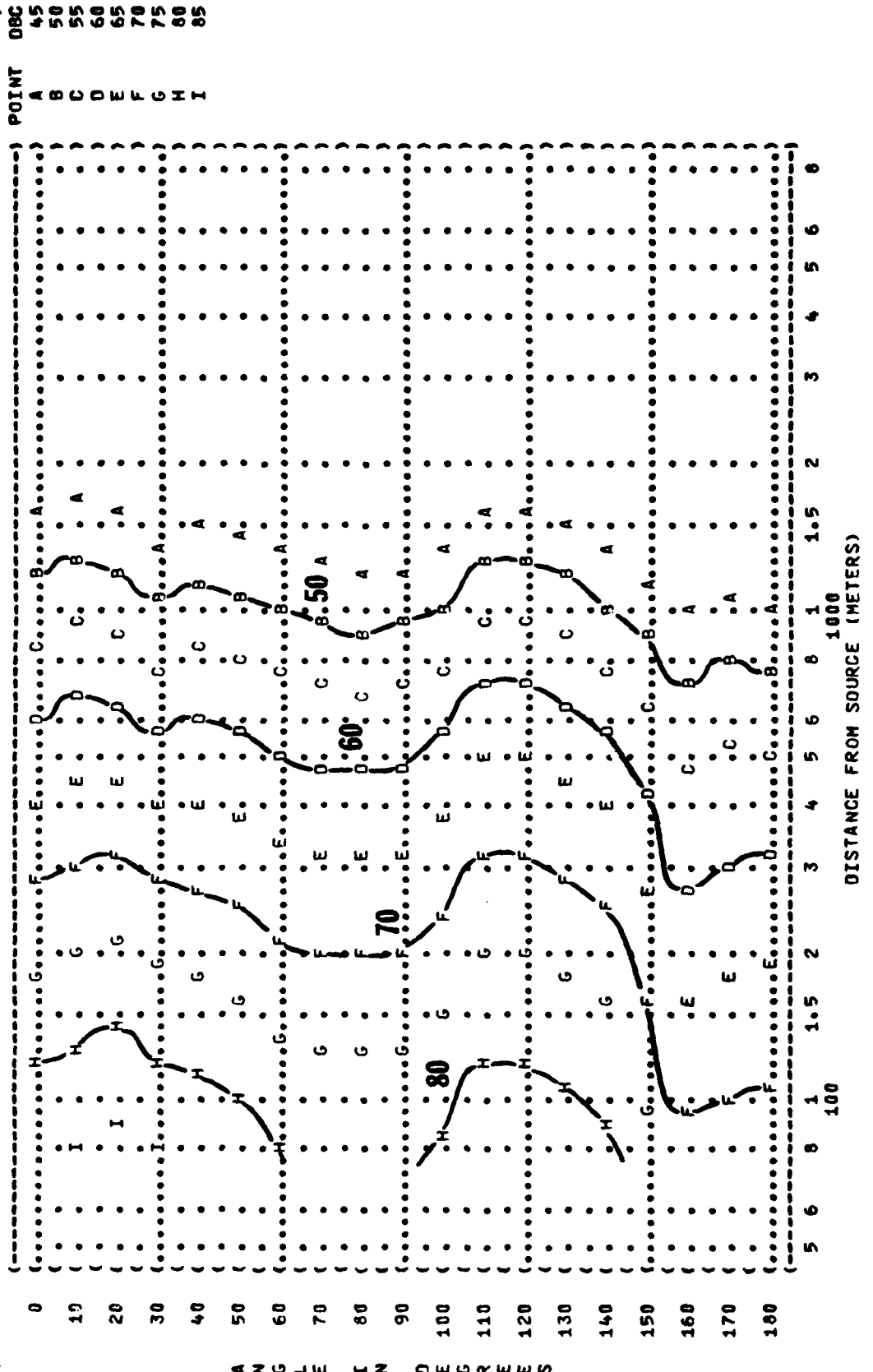


FIGURE: C-WEIGHTED OVERALL SOUND LEVEL (OASLC)
EQUAL LEVEL CONTOURS (OBC)

5

NOISE SOURCE/SUBJECT:

OPERATION:

METEOROLOGY:

F-10 AIRCRAFT

MILITARY POWER

TEMP = 15 C

F404-GE-400

94% RPM

BAR PRESS = .760 M HG

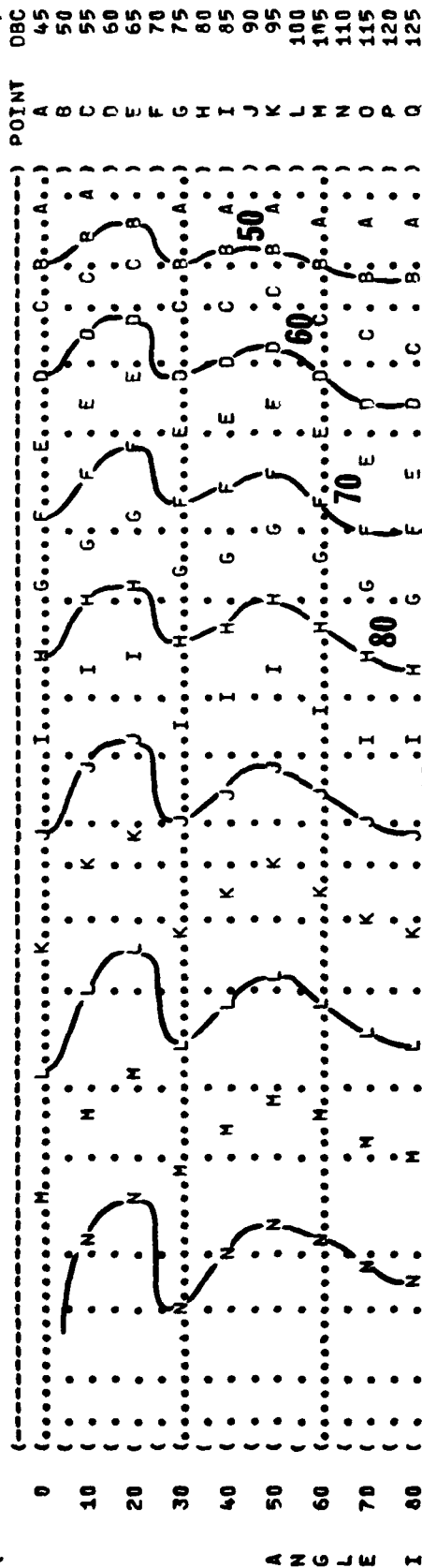
FAR FIELD NOISE

SINGLE ENGINE

REL HUMID = 70 %

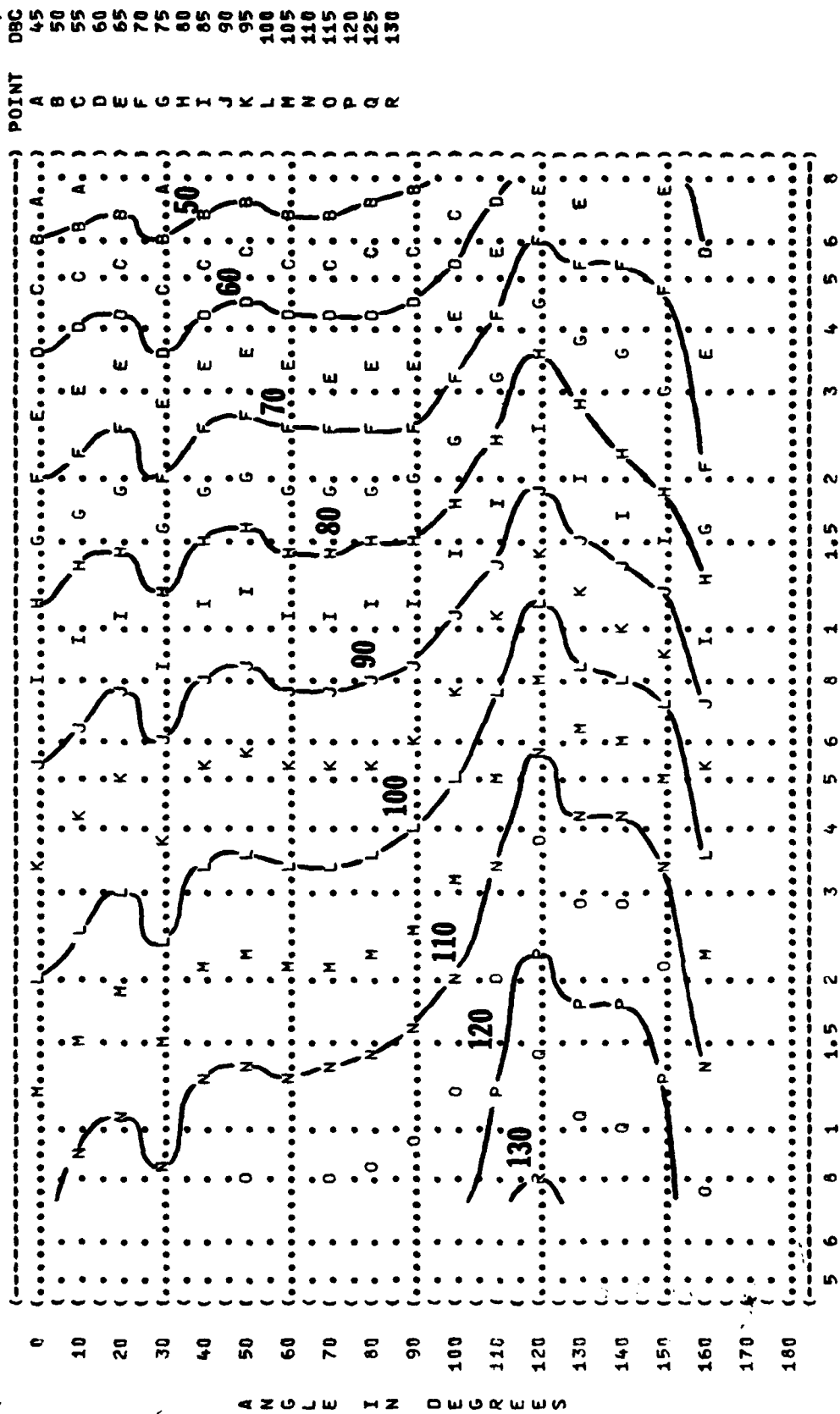
FREE FLOW

PAGE 14



DISTANCE FROM SOURCE (METERS)

(FIGURE: C-WEIGHTED OVERALL SOUND LEVEL (OASLC))
 (5 EQUAL LEVEL CONTOURS (DBC))
 ()
 () IDENTIFICATIONS:)
 ()
 () OMEGA 1.4)
 () TEST AM-007-001)
 () RUN 04)
 ()
 (NOISE SOURCE/SUBJECT:) OPERATION:) METEOROLOGY:)
 () AFTERBURNER POWER) TEMP = 15 C)
 () F-18 AIRCRAFT) MINIMUM SETTING) BAR PRESS = .760 M HG)
 () F404-GE-400) SINGLE ENGINE) REL HUMID = 70 %)
 () FAR FIELD NOISE) FREE FLOW)
 () PAGE 14)



DISTANCE FROM SOURCE (METERS)

FIGURE: C-WEIGHTED OVERALL SOUND LEVEL (OASLC)
EQUAL LEVEL CONTOURS (DBC)

5

IDENTIFICATION:
OMEGA 1.4
TEST AM-007-001
RUN 05
METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %
OPERATION:
AFTERBURNER POWER-
MAXIMUM
SINGLE ENGINE
FREE FLOW
NOISE SOURCE/SUBJECT:
F-18 AIRCRAFT
F404-GE-400
FAR FIELD NOISE
PAGE 14

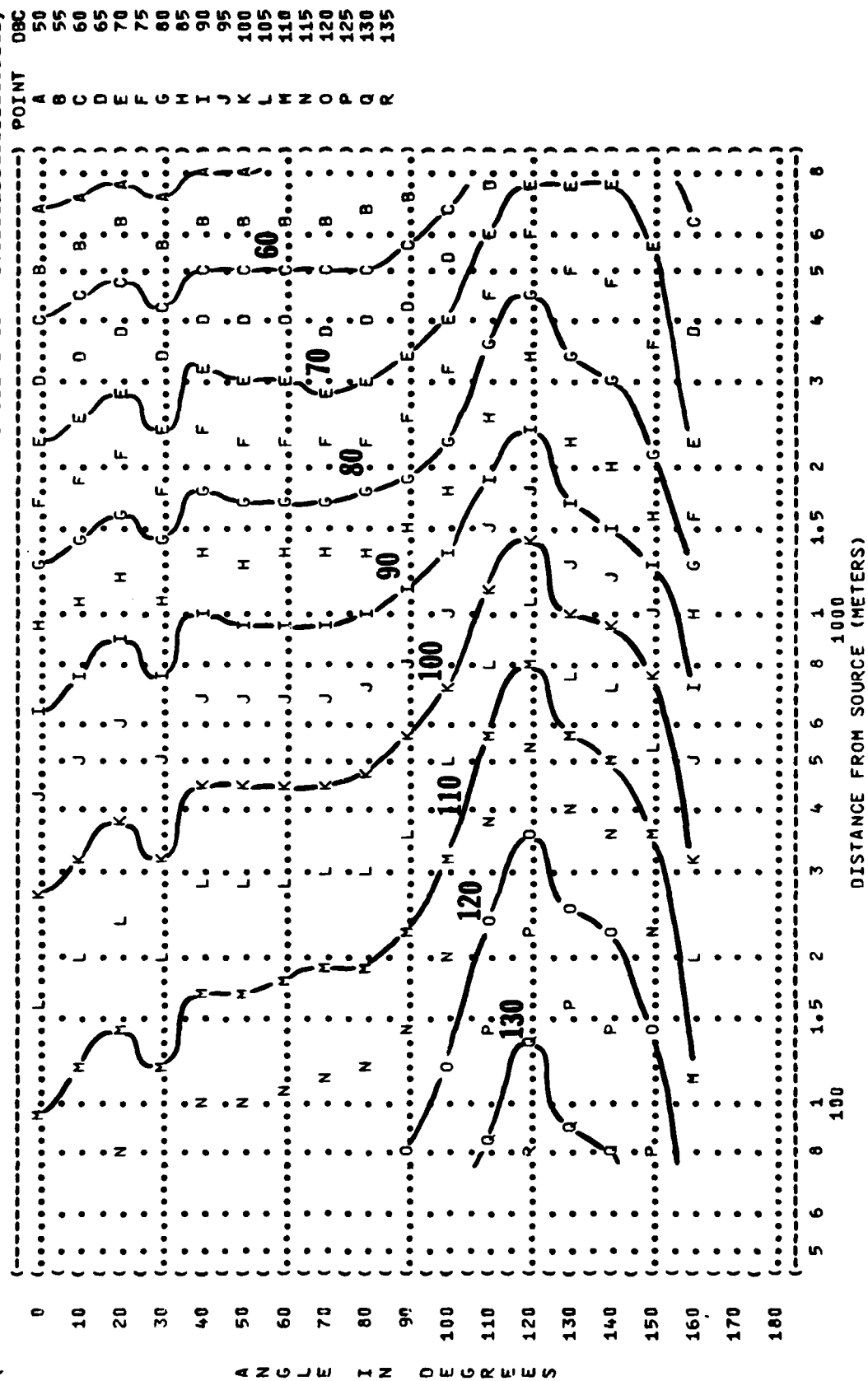
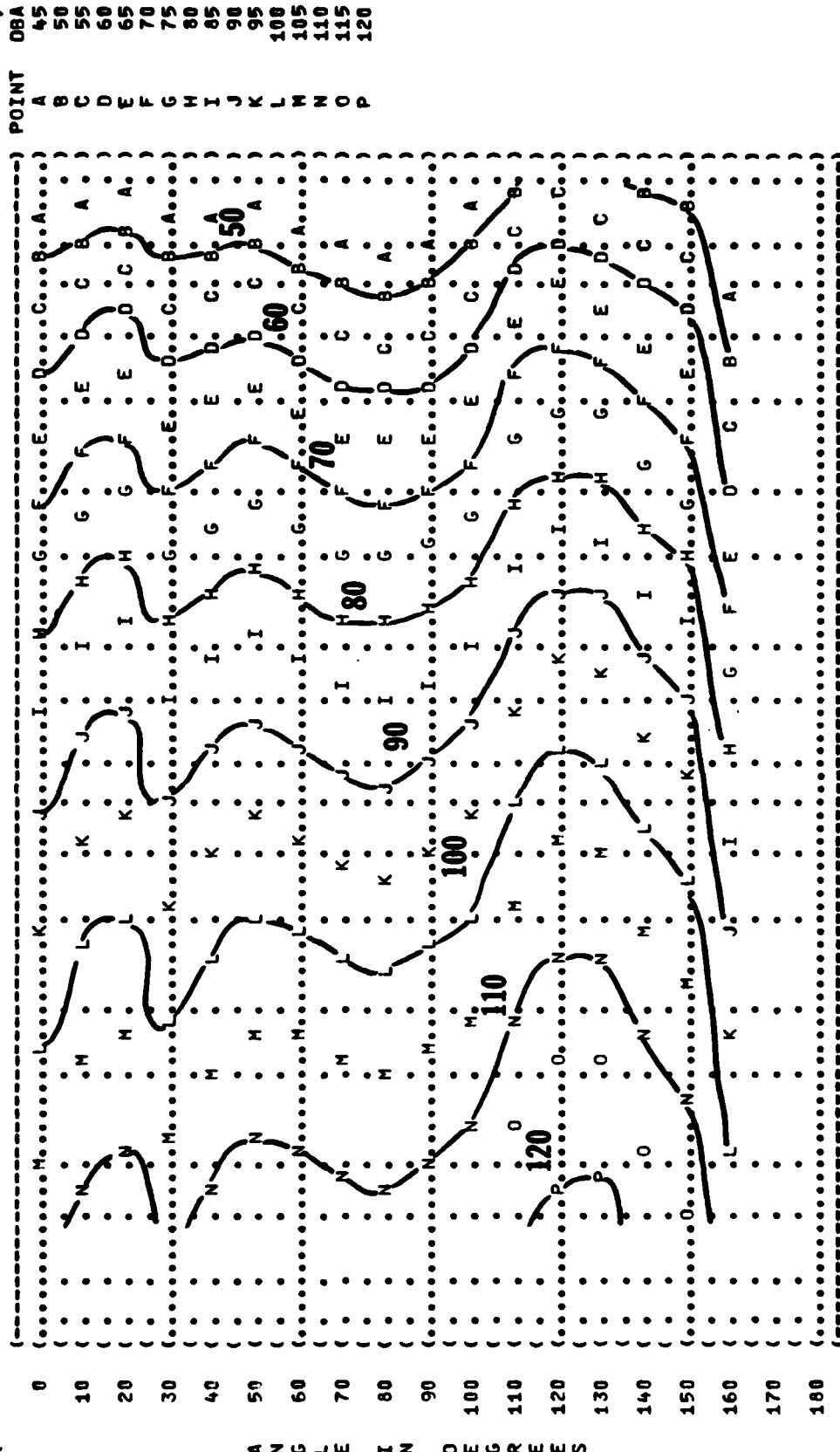


FIGURE: A-WEIGHTED OVERALL SOUND LEVEL (OASLA)
EQUAL LEVEL CONTOURS (DBA)

6

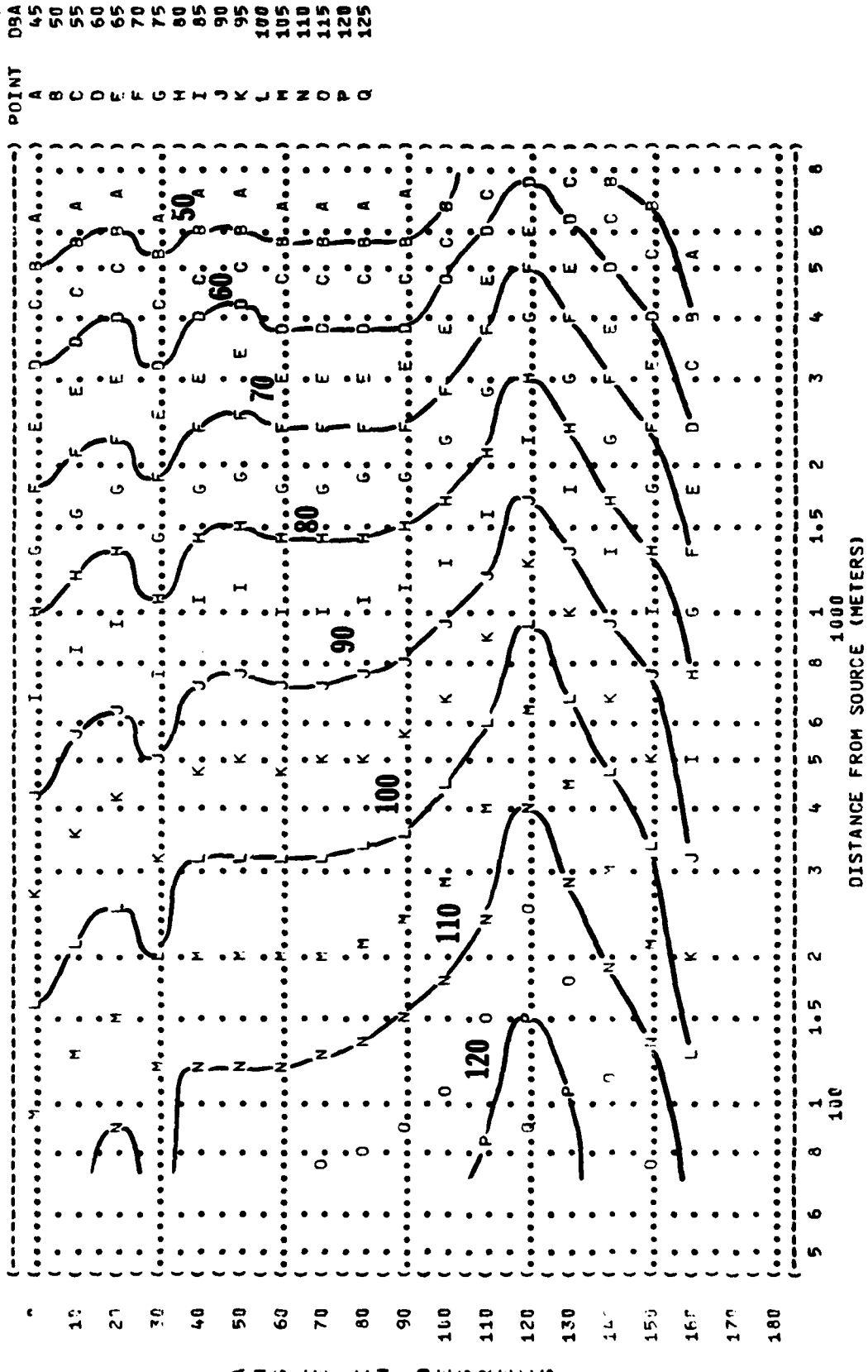
IDENTIFICATION:)
OMEGA 1.4
TEST AM-007-001
RUN 03
METEOROLOGY:)
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %
PAGE 15

NOISE SOURCE/SUBJECT:)
OPERATION:)
MILITARY POWER
94% RPM
SINGLE ENGINE
FREE FLOW



DISTANCE FROM SOURCE (METERS)

(FIGURE: A-WEIGHTED OVERALL SOUND LEVEL (OASLA))
 (6)
 (NOISE SOURCE/SUBJECT:)
 (F-18 AIRCRAFT)
 (F404-GE-400)
 (FAP FIELD NOISE)
 (OPERATION:)
 (AFTERBURNER POWER)
 (MINIMUM SETTING)
 (SINGLE ENGINE)
 (FREE FLOW)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (RAP PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATIONS:)
 (OMEGA 1.4)
 (TEST AM-007-001)
 (RUN 04)
 (22 MAR 79)
 (PAGE 15)



DISTANCE FROM SOURCE (METERS)

IDENTIFICATION:

OMEGA 1-4

METEOROLOGY:

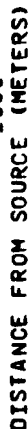
RUN 05

TEMP = 15 C

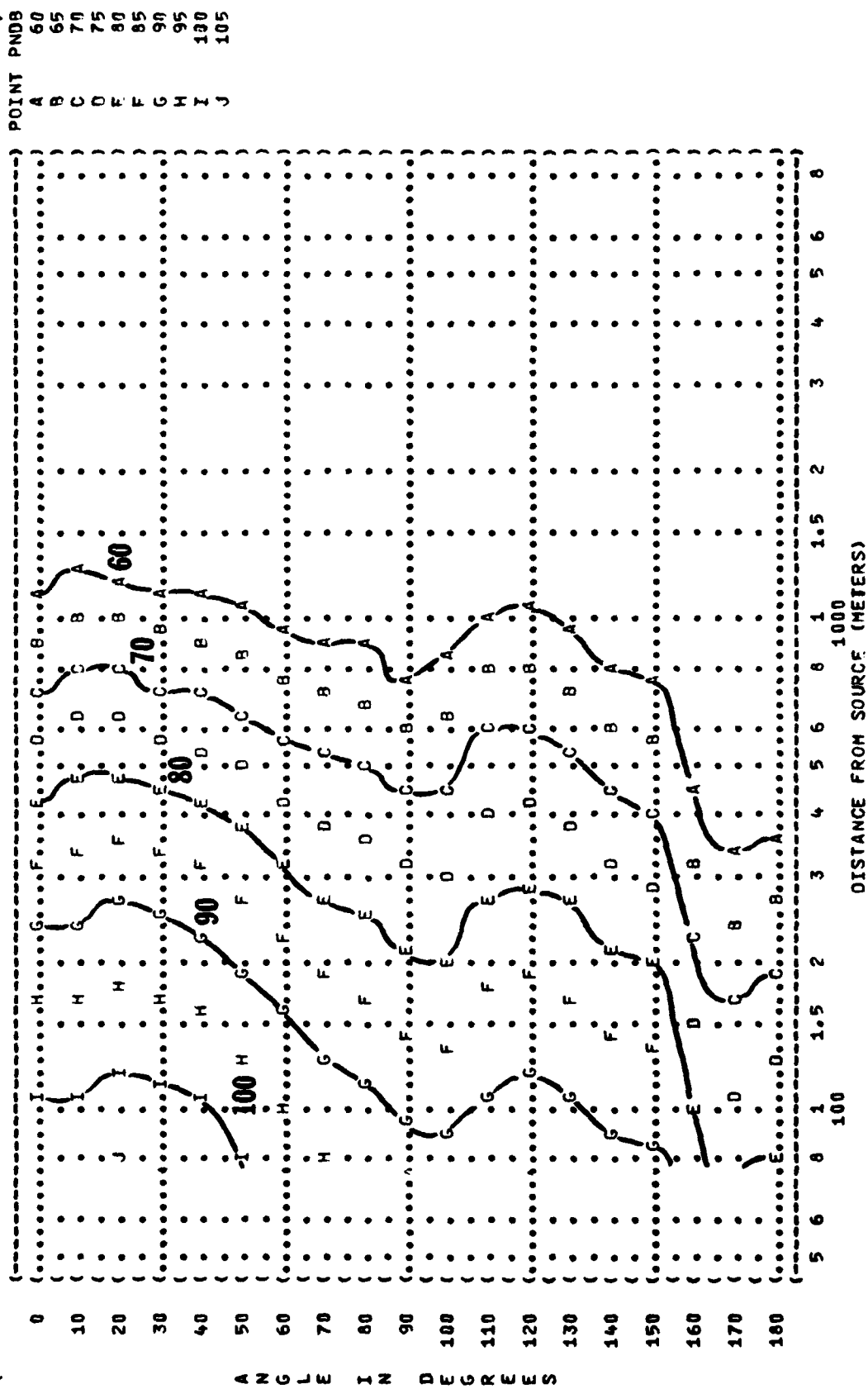
BAR PRESS = .760 M HG

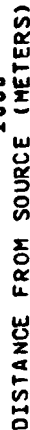
REL HUMID = 70 %

PAGE 15

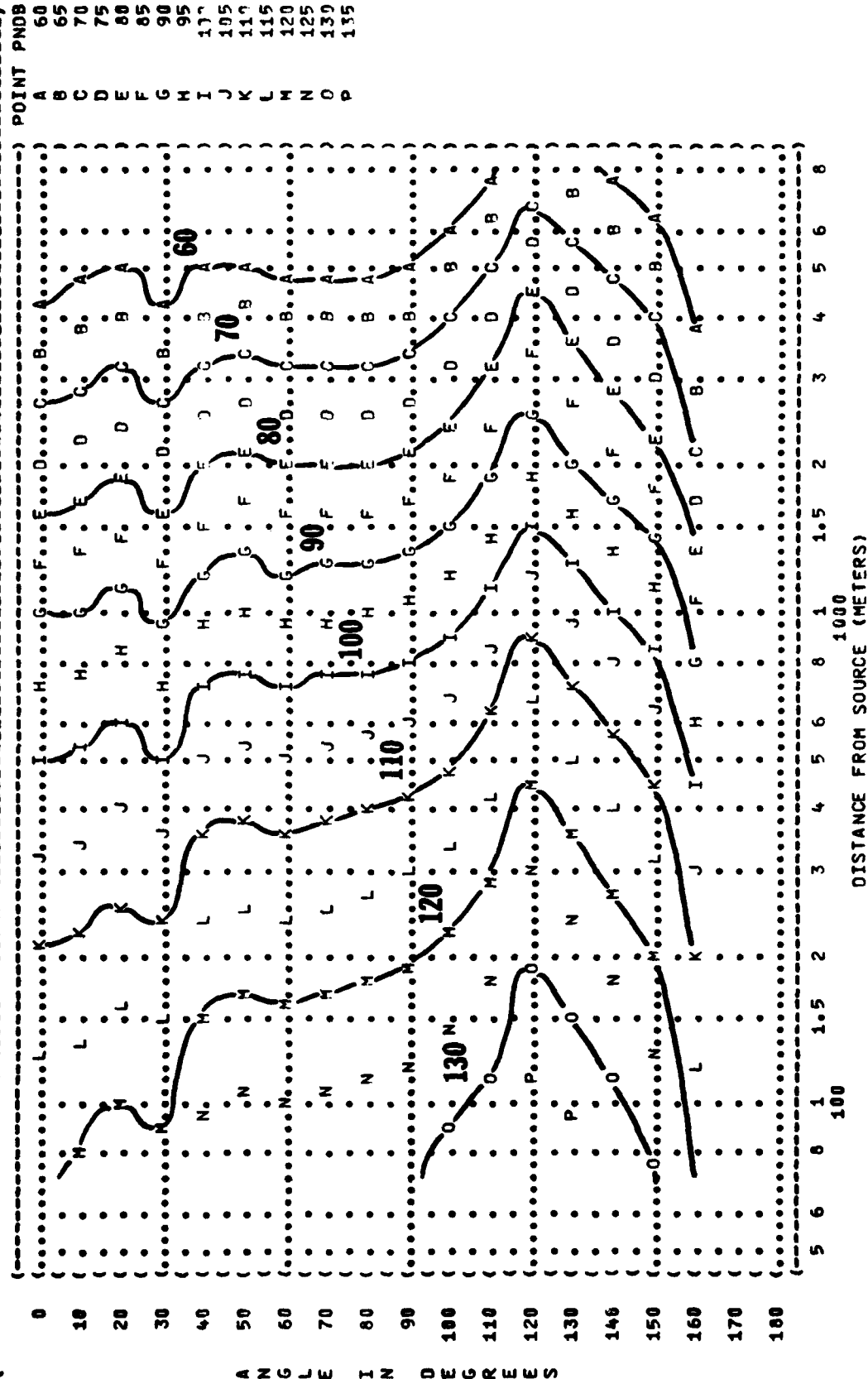


```
(-----)
( FIGURE: PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT) ) IDENTIFICATION: )
(      7 EQUAL LEVEL CONTOURS (PND8) ) ) )
(-----)
( NOISE SOURCE/SUBJECT: ) METEOROLOGY: )
( ( OPERATION: ) TEMP = 15 C ) )
( F-18 AIRCRAFT ) BAR PRESS = .760 H MG ) )
( F404-GE-400 ) SINGLE ENGINE ) REL HUMID = 70 % ) )
( FAR FIELD NOISE ) FREE FLOW ) PAGE 16 )
(-----)
```



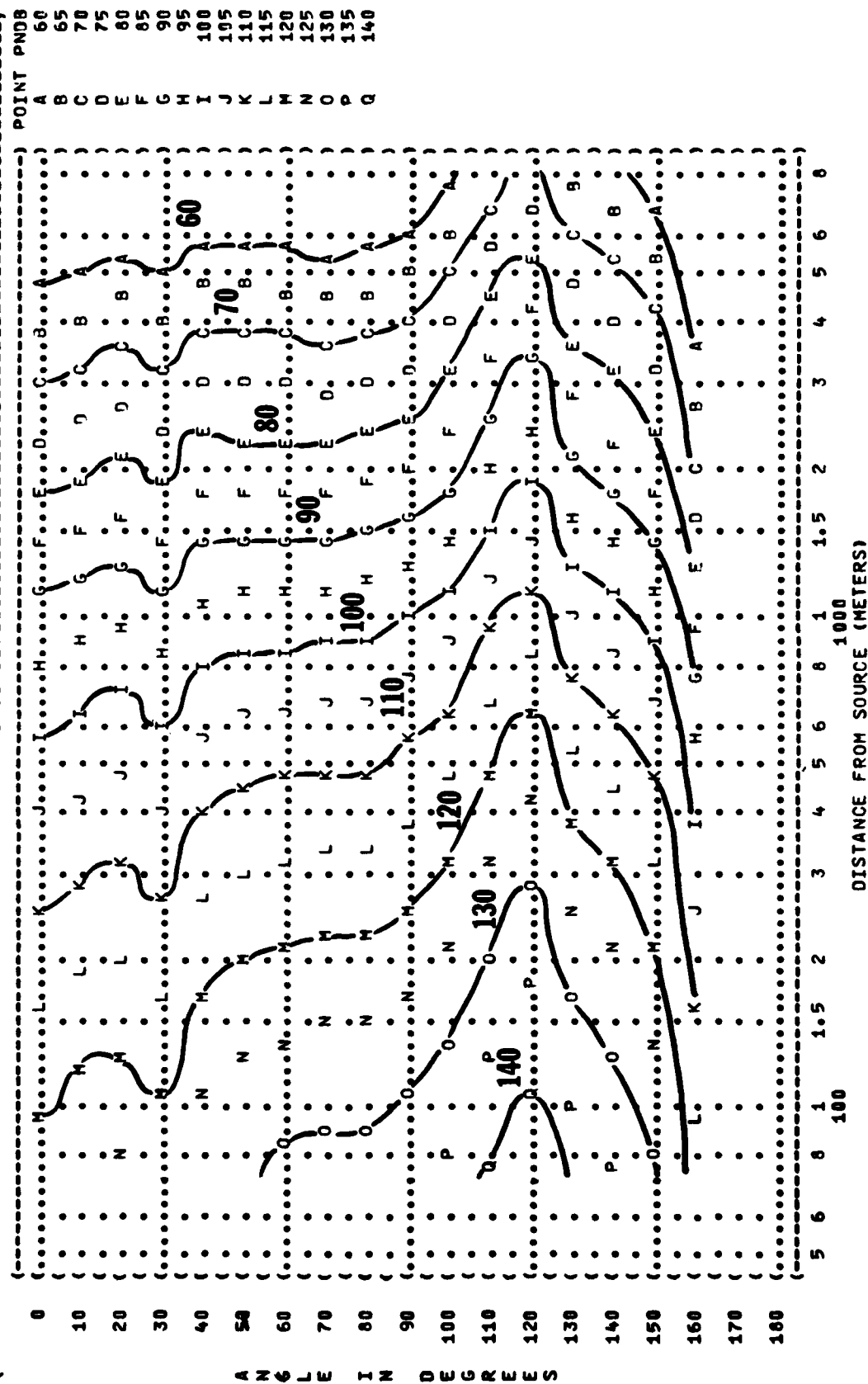


44



DISTANCE FROM SOURCE (METERS)

(FIGURE: PERCEIVED NOISE LEVEL WITH SMOOTH TONE CORRECTION (PNLT)) IDENTIFICATION:)
 (7 EQUAL LEVEL CONTOURS (PNDB)))
 () OMEGA 1.4)
 () TEST AM-007-001)
 () RUN 05)
 (NOISE SOURCE/SUBJECT:) OPERATION:) METEOROLOGY:)
 () AFTERBURNER POWER) TEMP = 15 C)
 (F-18 AIRCRAFT) MAXIMUM) BAR PRESS = .760 M HG)
 (F404-GE-400) SINGLE ENGINE) REL HUMID = 70 %)
 (FAR FIELD NOISE) FREE FLOW))
 () PAGE 16)



(FIGURE: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL)
 (8 EQUAL LEVEL CONTOURS (DB)
 () IDENTIFICATION:
 () OMEGA 1.4
 () TEST AM-007-001
 () RUN 01
 () METEOROLOGY:
 () TEMP = 15 C
 () BAR PRESS = .760 M HG
 () REL HUMID = 70 %
 () PAGE 17
 () NOISE SOURCE/SUBJECT:
 () OPERATION:
 () IDLE POWER
 () 63% RPM
 () SINGLE ENGINE
 () FREE FLOW
 () F-18 AIRCRAFT
 () F404-GE-400
 () FAR FIELD NOISE

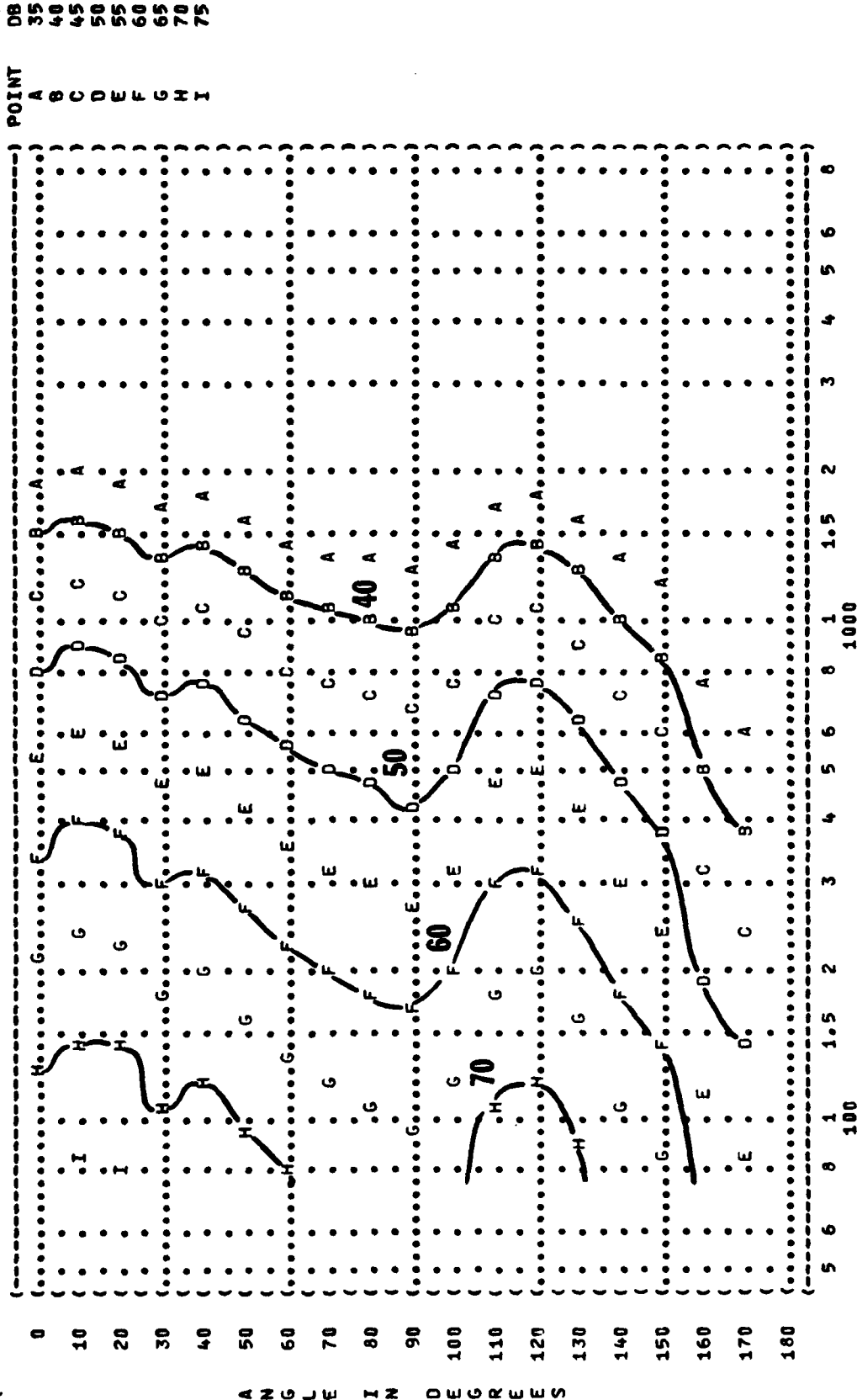
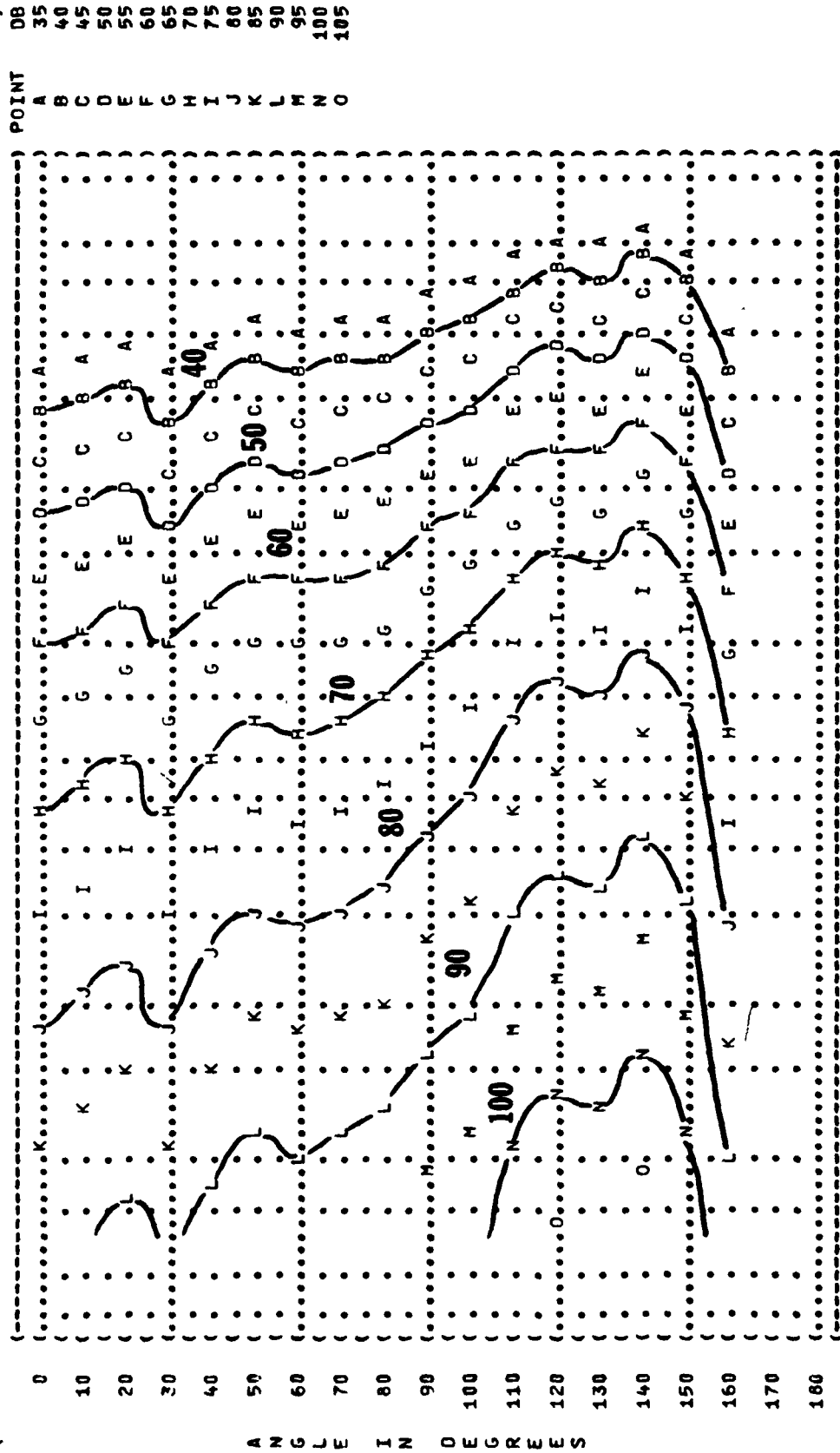


FIGURE 8: PREFERRED SPEECH INTERFERENCE LEVEL (PSIL)
EQUAL LEVEL CONTOURS (ID3)

IDENTIFICATION: OMEGA 1.4
TEST AM-007-001
RUN 02
METEOROLOGY: TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %
OPERATION: F-18 AIFCRAFT
SINGLE ENGINE
FREE FLOW
NOISE SOURCE/SUBJECT: F474-GE-403
FAR FIELD NOISE
PAGE 17

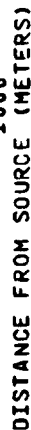


IDENTIFICATION:)
OMEGA 1.4)
TEST AM-007-001)

METEOROLOGY:

BAR PRESS = .760 M HG

REL HUMID = 70 %



« Z O J W H Z O W O X W W V

FIGURE 1. PREFERRED SPEECH INTERFERENCE LEVEL (PSIL) EQUAL LEVEL CONTOURS (DB)

IDENTIFICATION:

OMEGA 1.4

() TEST AM-67-001

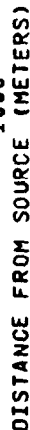
() RUN 64

TEMP	=	15 C	15 C	15 C
TEMP	=	15 C	15 C	15 C

BAP	PRESS	=	• 7611	M	HG
BEI	HUMID	=	70	%	

REL HUMID - 10 %

100-443887-100



420 JE HZ 05000000

) IDENTIFICATIONS)
))

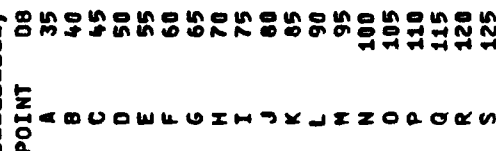
OMEGA 1.4

RUN 05

22 MAR 79

12

PAGE 17



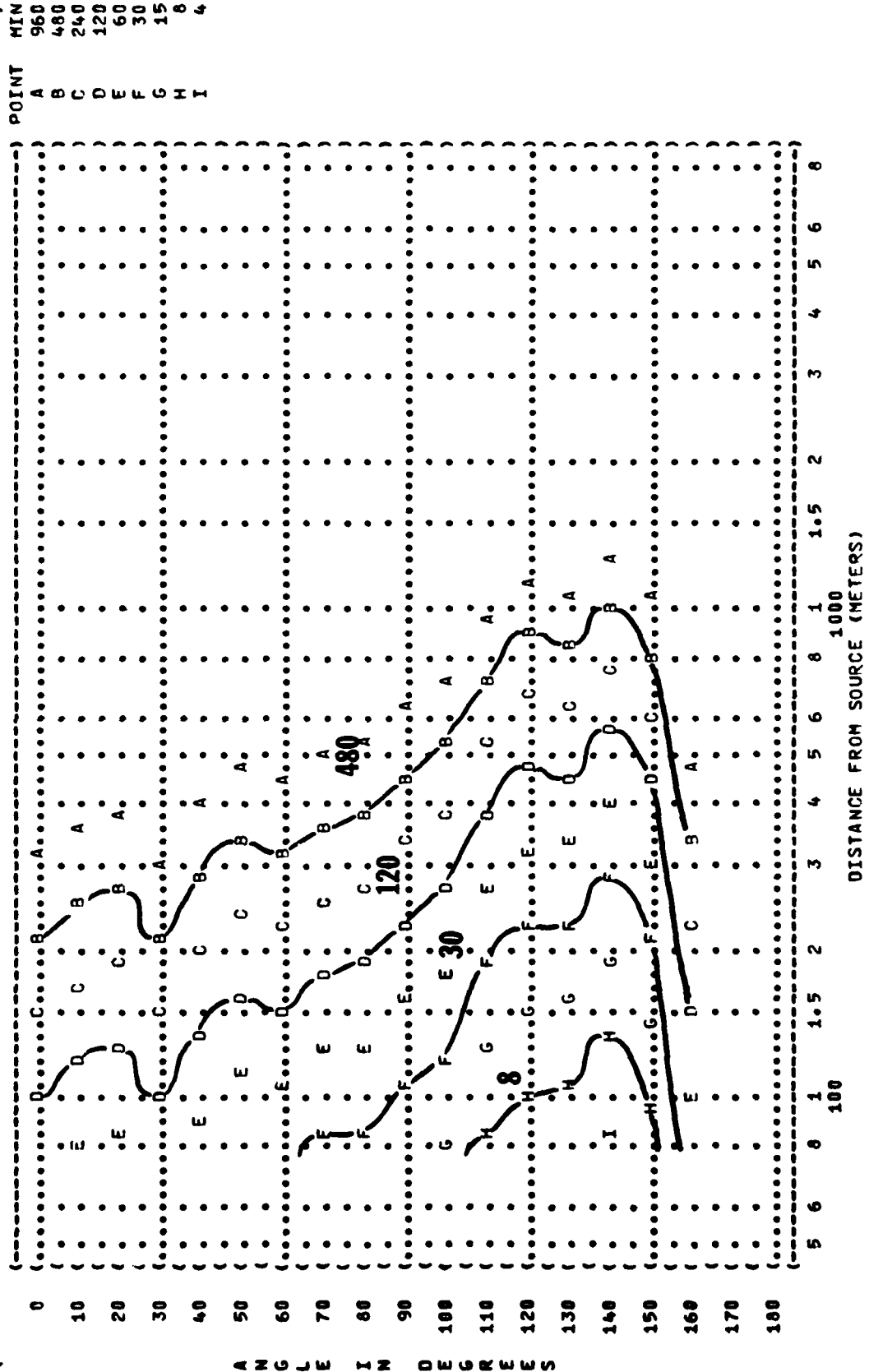
1000
DISTANCE FROM SOURCE (METERS)

(-----)
(FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
(9
(EQUAL TIME CONTOURS (MINUTES)
(-----)
(NOISE SOURCE/SUBJECT:) METEOROLOGY:
() OPERATION:)
() IDLE POWER) TEMP = 15 C
() F-18 AIRCRAFT) 63% RPM) BAR PRESS = .760 M HG
() F404-GE-400) SINGLE ENGINE) REL HUMID = 70 %
() FAR FIELD NOISE) FREE FLOW) PAGE 8
(-----)
(IDENTIFICATION:
() OMEGA 1.4
() TEST AM-007-001
() RUN 01

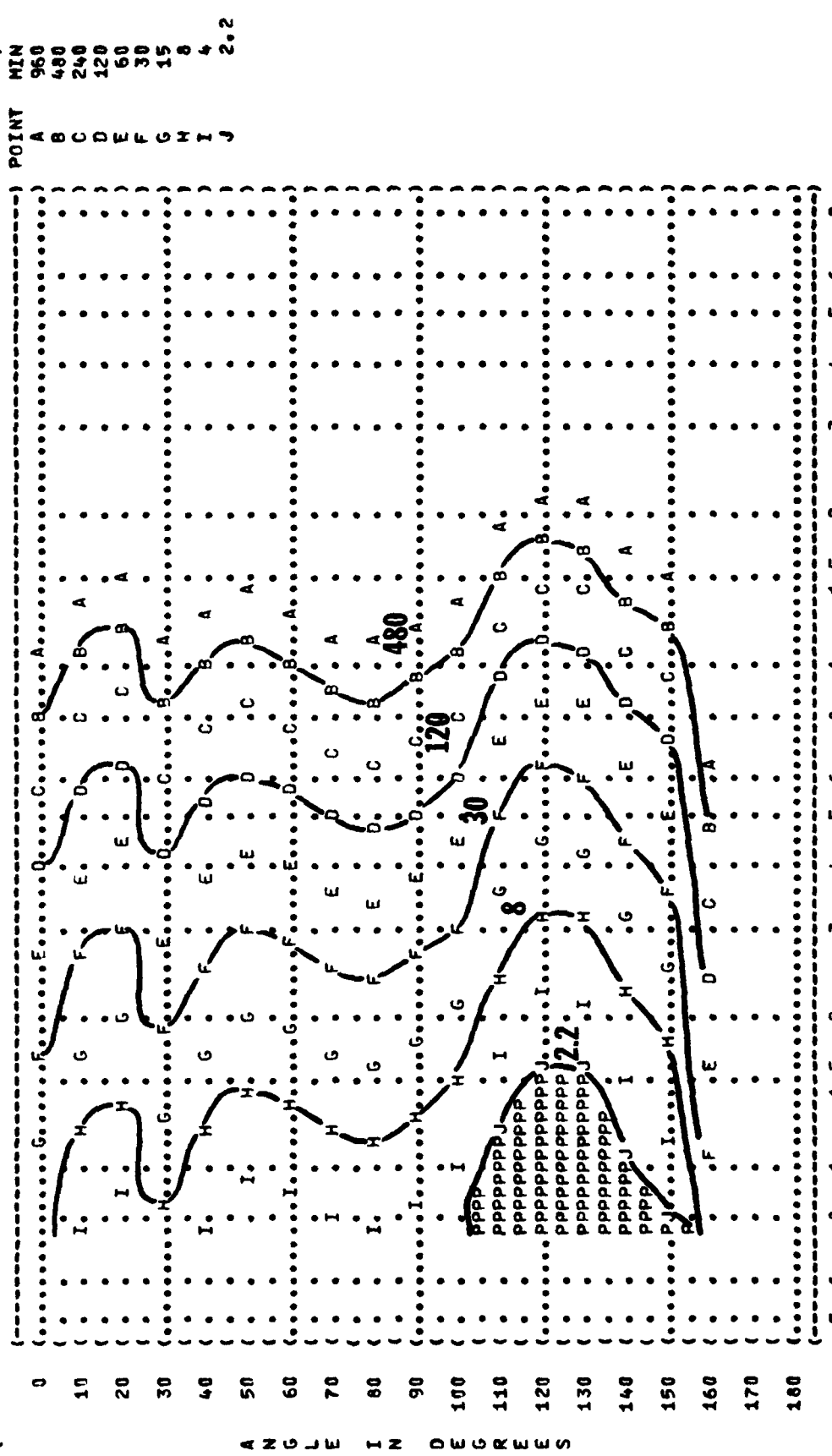
0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
PERSONNEL MAY BE EXPOSED UP TO 960 MINUTES PER DAY																		
AT ALL DISTANCES FROM SOURCE EQUAL TO OR GREATER THAN 75 METERS																		
FOR ALL ANGLES EVALUATED (INDICATED BY \angle AT LEFT)																		
UNDER THE FOLLOWING EAR PROTECTION CONDITIONS:																		
MINIMUM QPL EAR MUFFS																		
AMERICAN OPTICAL 1700 EAR MUFFS																		
V-51R EAR PLUGS																		
COMFIT TRIPLE FLANGE EAR PLUGS																		
M-133 GROUND COMMUNICATION UNIT																		

DISTANCE FROM SOURCE (METERS)

(FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)) IDENTIFICATION:)
 (9) EQUAL TIME CONTOURS (MINUTES))
 (NO PROTECTION) OMEGA 1.4)
 (NOISE SOURCE/SUBJECT:) OPERATION:) METEOROLOGY:)
 ()) TEMP = 15 C)
 (F-10 AIRCRAFT) 85% RPM) BAR PRESS = .760 M HG)
 (F404-GE-400) SINGLE ENGINE) REL HUMID = 70 %)
 (FAR FIELD NOISE) FREE FLOW)
 ()) PAGE 7)

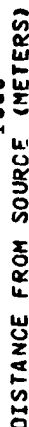


(FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)) IDENTIFICATION:)
 (9) EQUAL TIME CONTOURS (MINUTES))
 (NO PROTECTION) OMEGA 1.4
 (NOISE SOURCE/SUBJECT:) OPERATION:) METEOROLOGY:) TEST AM-007-001)
 (F-18 A/CRAFT) MILITARY POWER) TEMP = 15 C) RUN 03)
 (F404-GE-400) 94% RPM) BAR PRESS = .760 M HG) 22 MAR 79)
 (FAR FIELD NOISE) SINGLE ENGINE) REL HUMID = 70 %)
 (FREE FLOW)) PAGE 7)

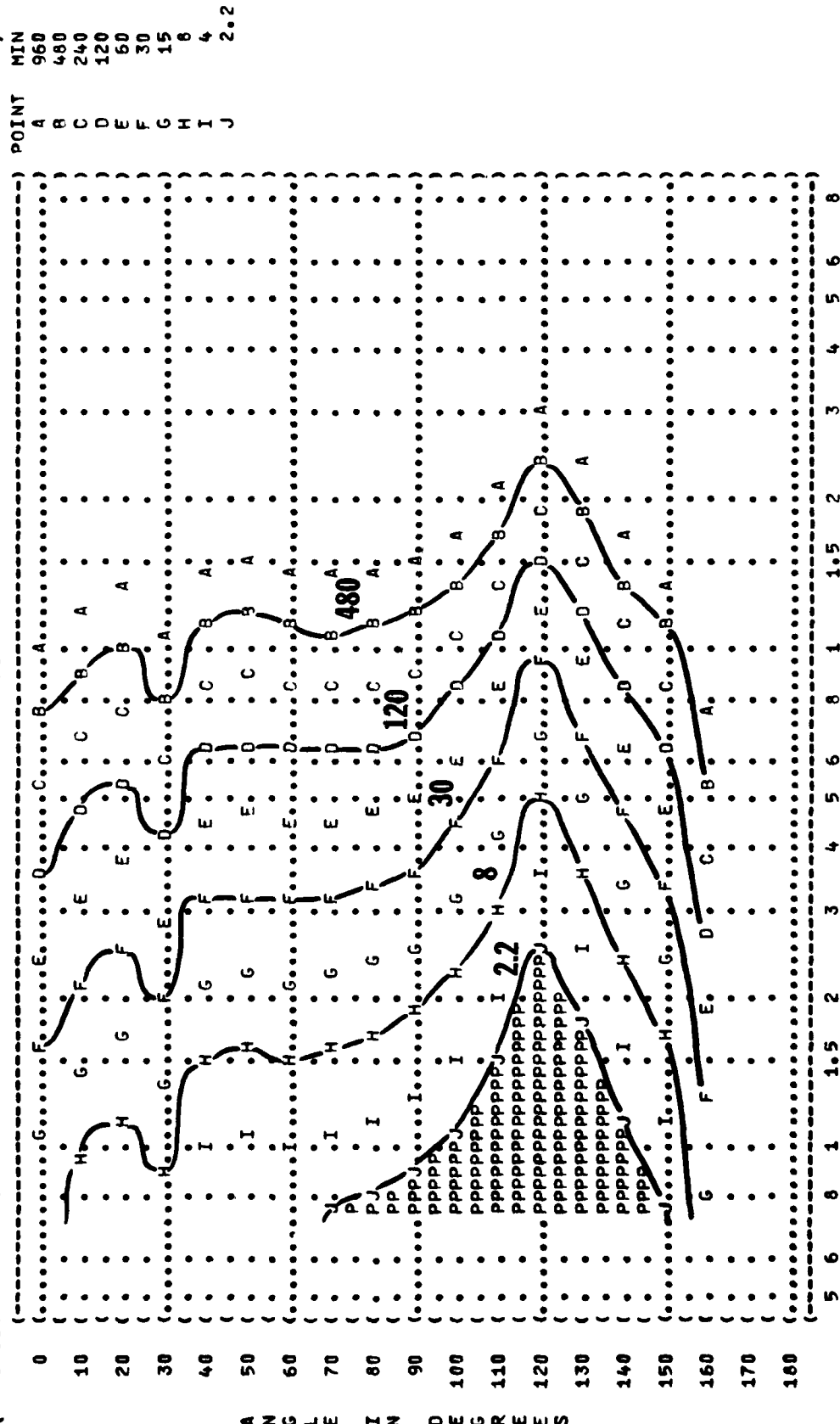


P ADDITIONAL EAR PROTECTION REQUIRED.

	(-----)	MIN	POINT
0	(.....A.....))	A 960	A
	(.....B.....))	B 480	B
10	(.....C.....))	C 240	C
	(.....D.....))	D 120	D
20	(.....E.....))	E 60	E




```
(-----)
( FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION:
(          EQUAL TIME CONTOURS (MINUTES) ) )
(          NO PROTECTION ) ) OMEGA 1.4
( ) ) TEST AM-007-C91
( ) ) RUN 04
( ) )
( NOISE SOURCE/SUBJECT: ) METEOROLOGY:
( ) OPERATION: ) TEMP = 15 C
( ) AFTERBURNER POWER ) BAR PRESS = .760 M HG
( ) MINIMUM SETTING ) REL HUMID = 78 %
( ) SINGLE ENGINE )
( ) FREE FLOW ) PAGE 7
( F-18 AIRCRAFT )
( F404-GE-400 )
( FAR FIELD NOISE )
```

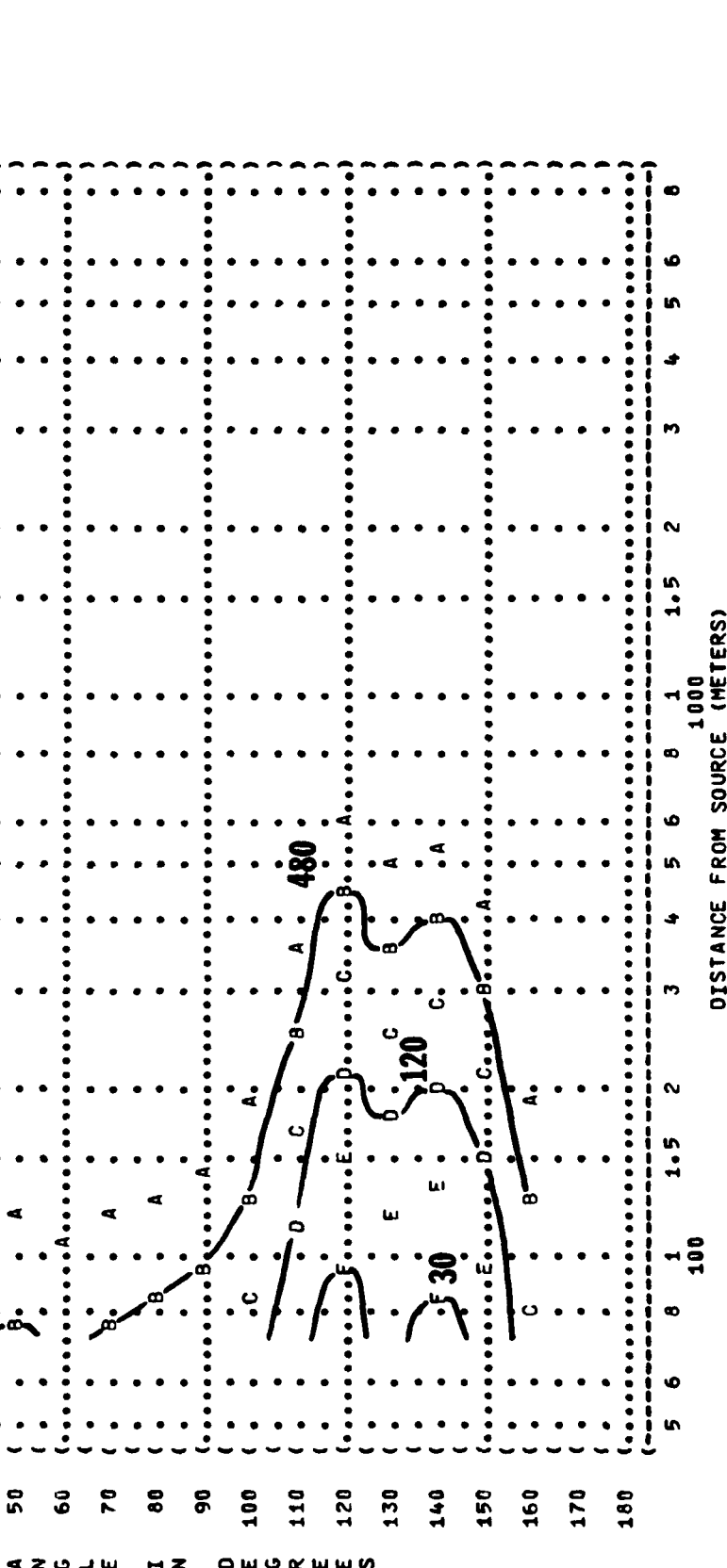


DISTANCE FROM SOURCE (METERS)

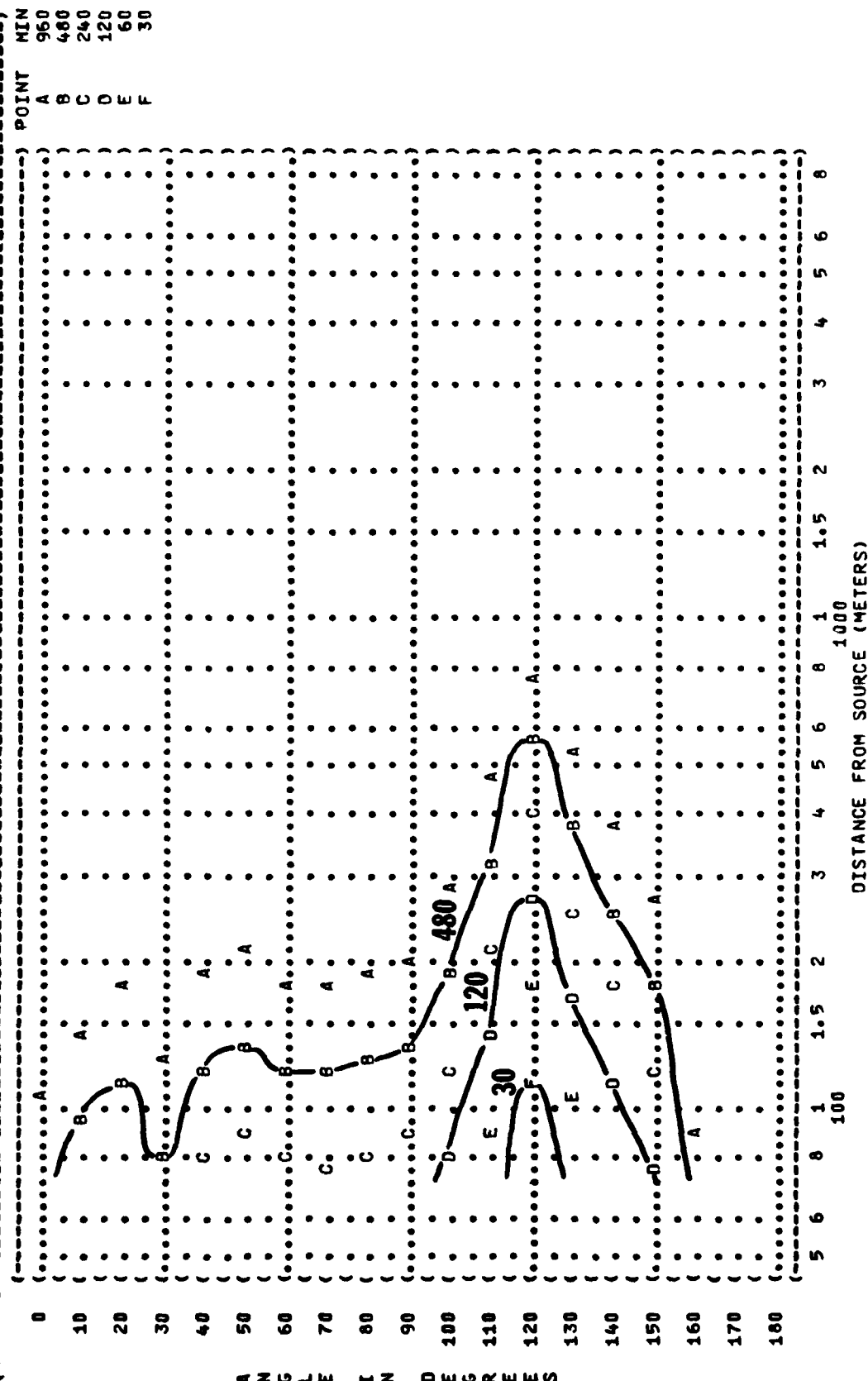
P ADDITIONAL EAR PROTECTION REQUIRED.

((FIGURE: MAXIMUM PERMISSIBLE TIME {T} FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
 ((9 EQUAL TIME CONTOURS (MINUTES)
 ((AMERICAN OPTICAL 1700 EAR MUFFS
 ((-----) OMEGA 1.4
 ((-----) TEST AM-007-001)
) IDENTIFICATION:)
))

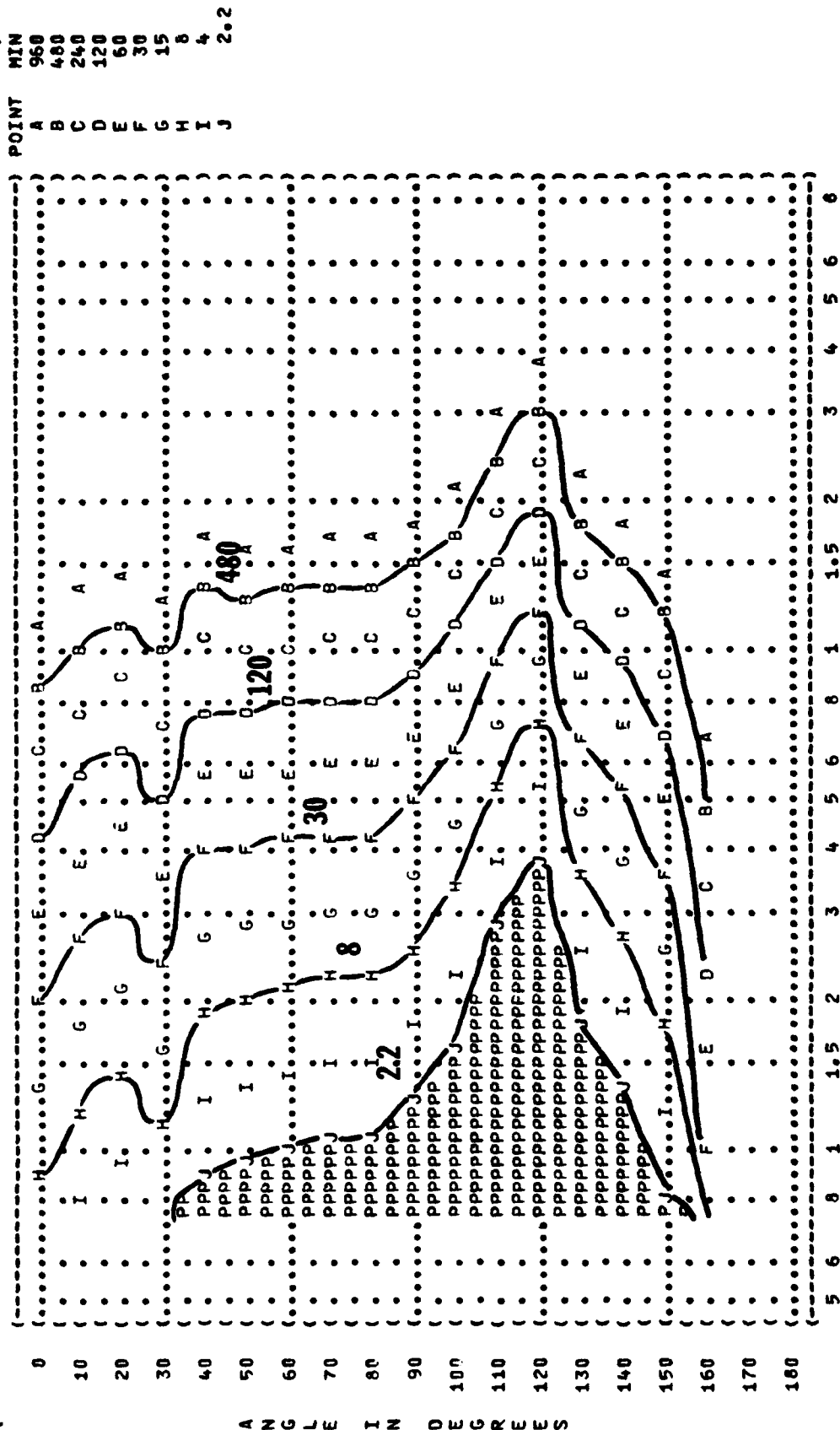
(NOISE SOURCE/SUBJECT:	(OPERATION:	(METEOROLOGY:) RUN 04
(((AFTERBURNER POWER	(TEMP = 15 C))
(((MINIMUM SETTING	(BAR PRESS = .760 M HG))
(F-18 AIRCRAFT	(SINGLE ENGINE	(REL HUMID = 70 %))
(F4U-GE-400	(FREE FLOW	() PAGE 9
(FAR FIELD NOISE)

[illegible]

(FIGURE: MAXIMUM PERMISSIBLE TIME {T} FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)
(EQUAL TIME CONTOURS (MINUTES)
(9
(V-51R EAR PLUGS
(NOISE SOURCE/SUBJECT:
(OPERATION:
(AFTERBURNER POWER) METEOROLOGY:
(MINIMUM SETTING) TEMP = 15 C
(SINGLE ENGINE) BAR PRESS = .760 M HG
(FREE FLOW) REL HUMID = 70 %
(F-18 AIRCRAFT)
(F404-GE-400)
(FAR FIELD NOISE) PAGE 10

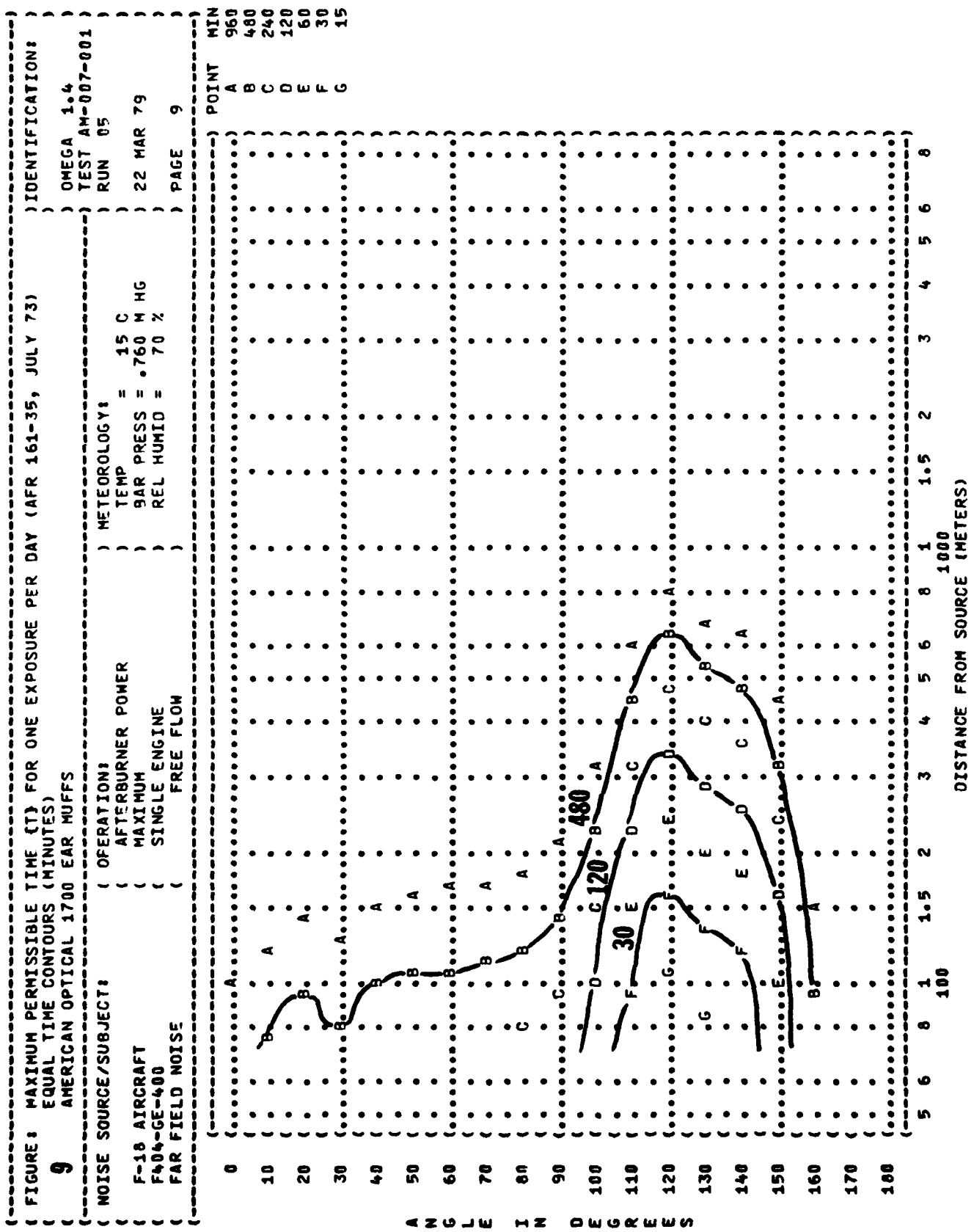


(FIGURE: MAXIMUM PERMISSIBLE TIME (T) FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73)) IDENTIFICATION:)
 (9) EQUAL TIME CONTOURS (MINUTES))
 (NO PROTECTION) OMEGA 1.4
 () TEST AM-007-001)
 () RUN 05)
 (NOISE SOURCE/SUBJECT:) OPERATION:) METEOROLOGY:)
 () AFTERBURNER POWER) TEMP = 15 C)
 (F-18 AIRCRAFT) MAXIMUM) BAR PRESS = .760 M HG)
 (F404-GE-400) SINGLE ENGINE) REL HUMID = 70 %)
 (FAR FIELD NOISE) FREE FLOW)
 () PAGE 7)



DISTANCE FROM SOURCE (METERS)

P ADDITIONAL EAR PROTECTION REQUIRED.



(PART 1)

0 10 20 30

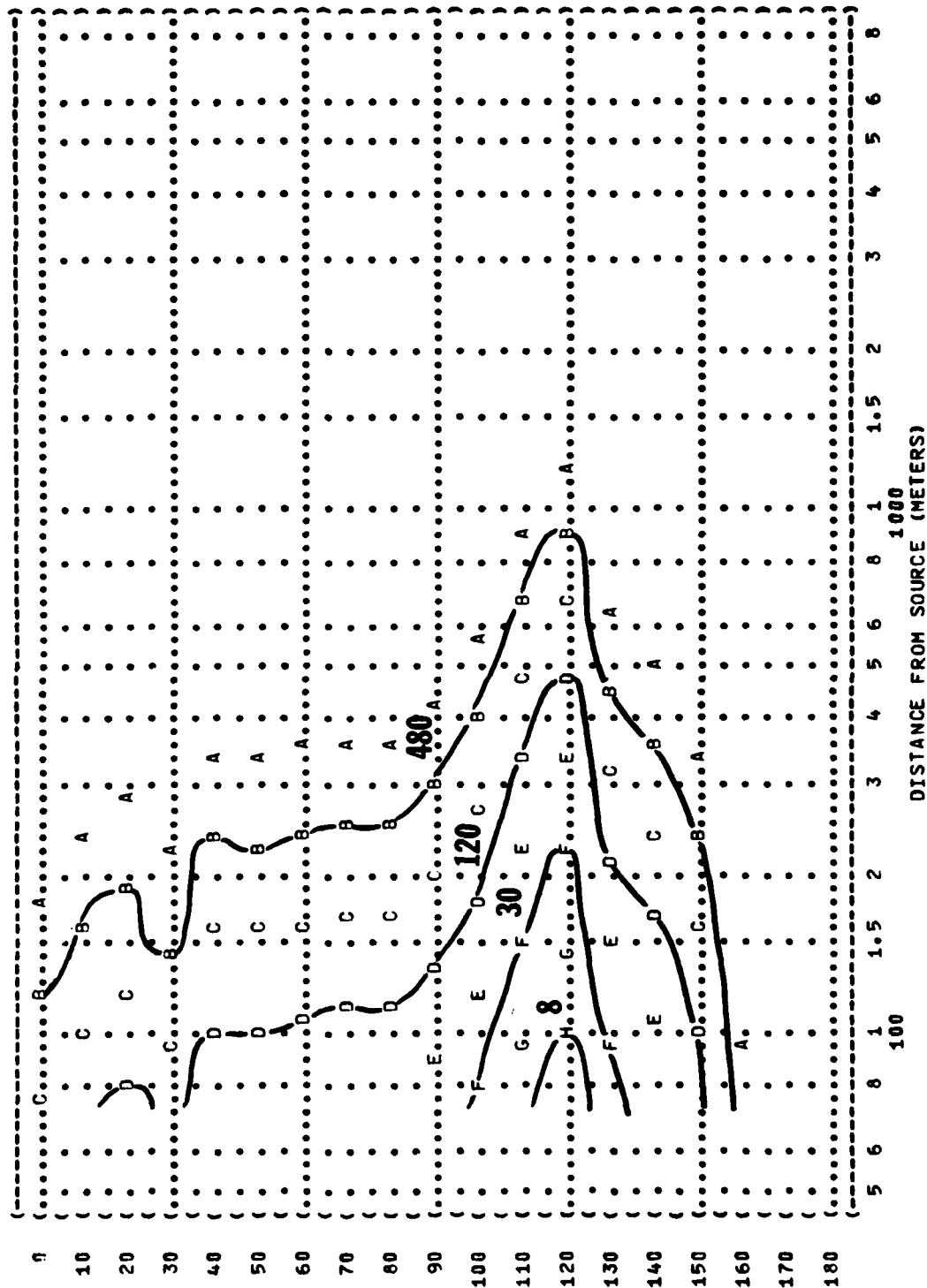


DISTANCE FROM SOURCE (METERS)


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(-----)
( FIGURE: MAXIMUM PERMISSIBLE TIME {T} FOR ONE EXPOSURE PER DAY (AFR 161-35, JULY 73) ) IDENTIFICATION: )
( ( ) ) )
( 9 EQUAL TIME CONTOURS (MINUTES) ) )
( COMFIT TRIPLE FLANGE EAR PLUGS ) OMEGA 1.4 )
(-----)
( NOISE SOURCE/SUBJECT: ) OPERATION: ) METEOROLOGY: ) TEST AM-007-001 )
( ( AFTERBURNER POWER ) TEMP = 15 C ) RUN 05 )
( F-18 AIRCRAFT ) MAXIMUM ) BAR PRESS = .760 M HG ) 22 MAR 79 )
( F404-GE-400 ) SINGLE ENGINE ) REL HUMID = 70 % ) )
( FAR FIELD NOISE ) FREE FLOW ) PAGE 11 )
(-----)
```

[illegible]

420 JE HZ 050455N




```

(-----)
( FIGURE: SOUND PRESSURE LEVEL (SPL) ) IDENTIFICATION:
( ) )
( ) )
( 10 EQUAL LEVEL CONTOURS (DB) ) OMEGA 1.4
( 31.5 HZ OCTAVE BAND ) TEST AM-007-001
(-----)
( NOISE SOURCE/SUBJECT: ) METEOROLOGY:
( ) )
( ) ) TEMP = 15 C
( ) ) BAR PRESS = .760 M HG
( F-18 AIRCRAFT ) ) REL HUMID = 70 %
( F404-GE-400 ) )
( FAR FIELD NOISE ) )
(-----)
( NO CONTOUR DATA---EITHER NO INPUT DATA WERE COMPUTED (=9999.0)
( OR MINIMUM CONTOUR LEVEL REQUESTED IS GREATER THAN MAXIMUM COMPUTED LEVEL.
(-----)

```

FIGURE: SOUND PRESSURE LEVEL (SPL)
 10 EQUAL LEVEL CONTOURS (DB)
 63 HZ OCTAVE BAND

IDENTIFICATION:
 OMEGA 1.4
 TEST AN-007-001
 RUN 01

NOISE SOURCE/SUBJECT:
 OPERATION:
 (IDLE POWER)
 (63% RPM)
 (SINGLE ENGINE)
 (FREE FLOW)

METEOROLOGY:
 TEMP = 15 C
 BAR PRESS = .760 M HG
 REL HUMID = 70 %

F-18 AIRCRAFT
 F404-GE-400
 FAR FIELD NOISE

PAGE 19

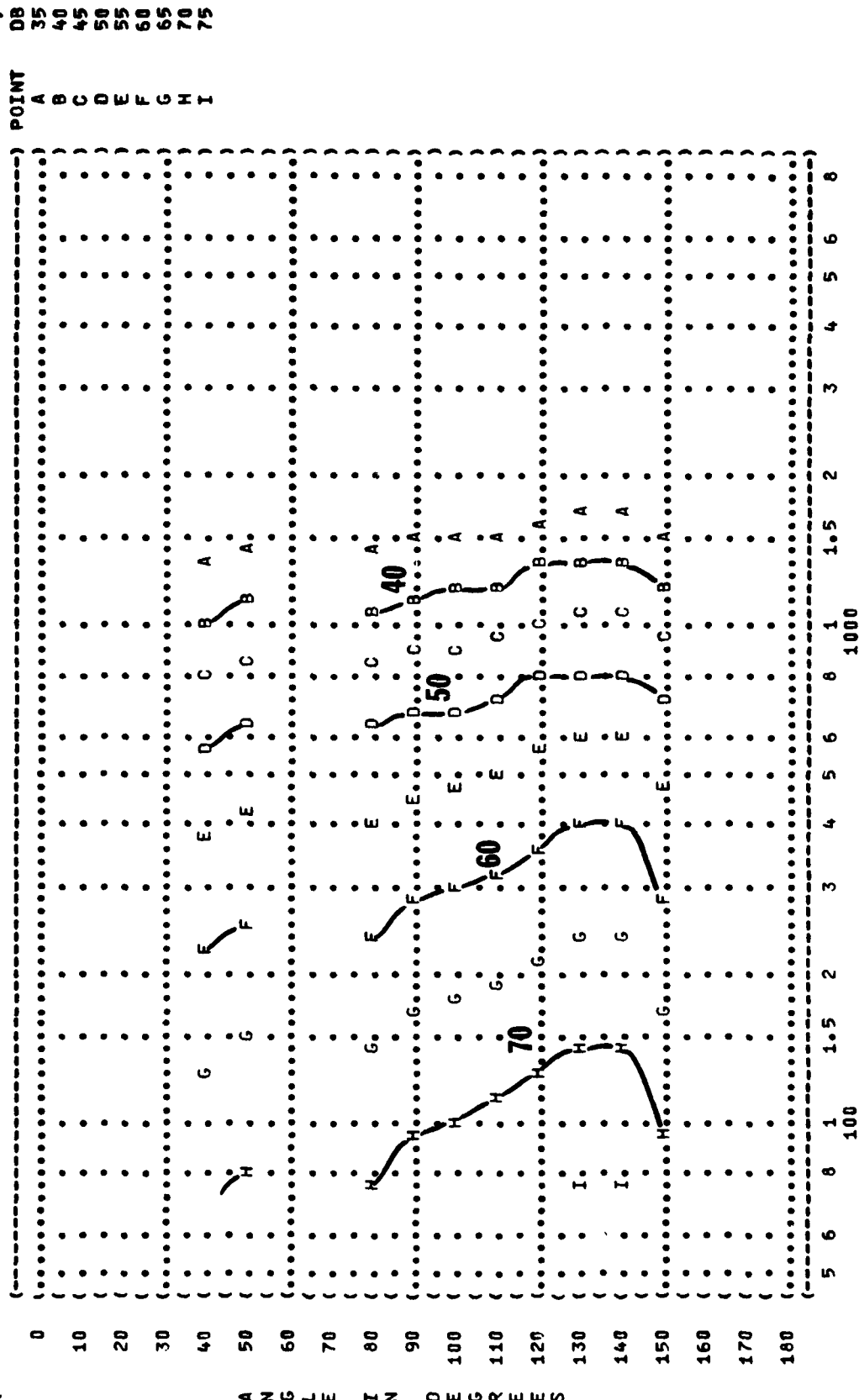


FIGURE: SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
10 250 HZ OCTAVE BAND

IDENTIFICATION:
OMEGA 1.4
TEST AM-007-001
RUN 01
METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %
OPERATION:
IDLE POWER
63% RPM
SINGLE ENGINE
FREE FLOW
NOISE SOURCE/SUBJECT:
F-18 AIRCRAFT
F404-GE-400
FAR FIELD NOISE
PAGE 21

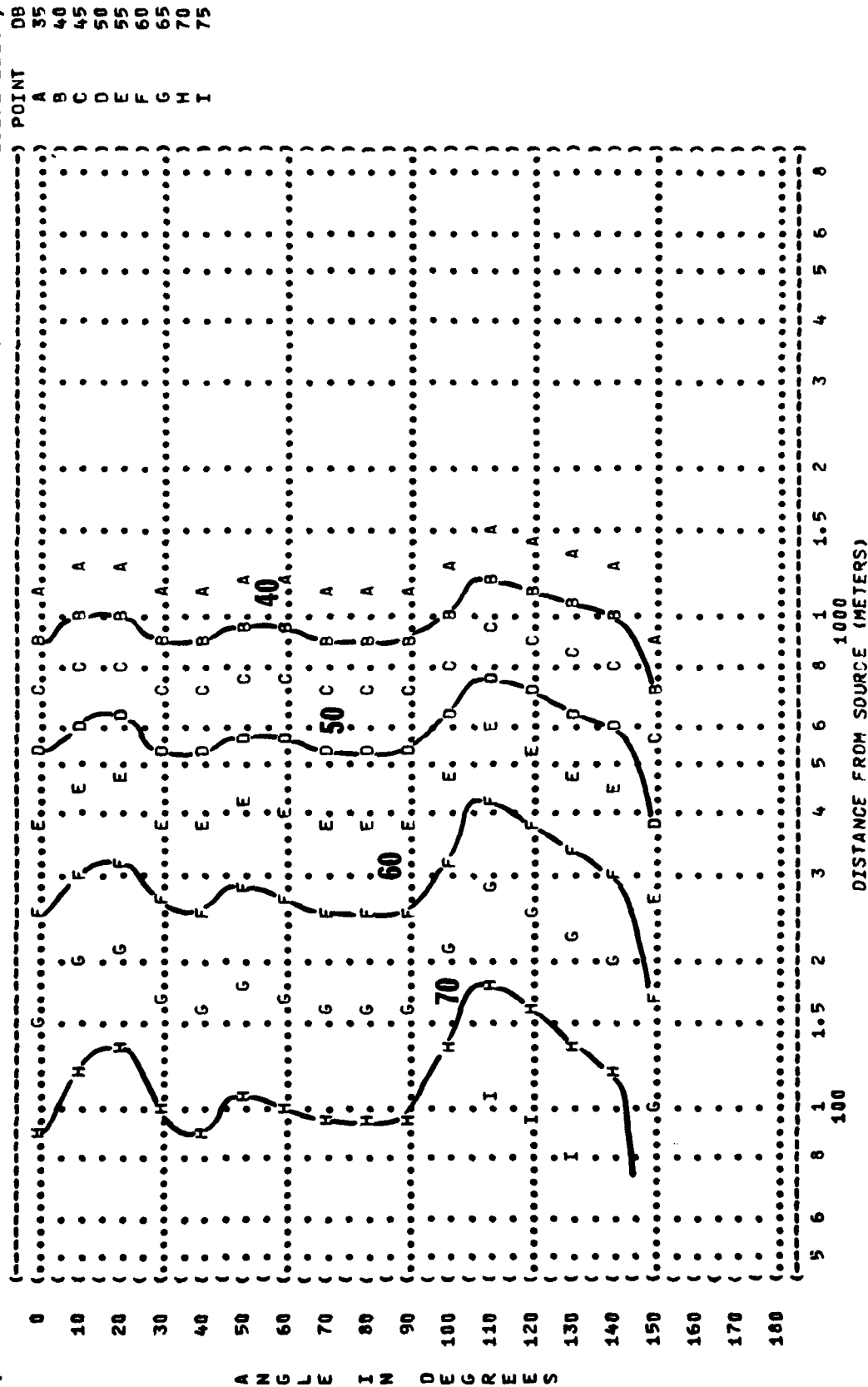


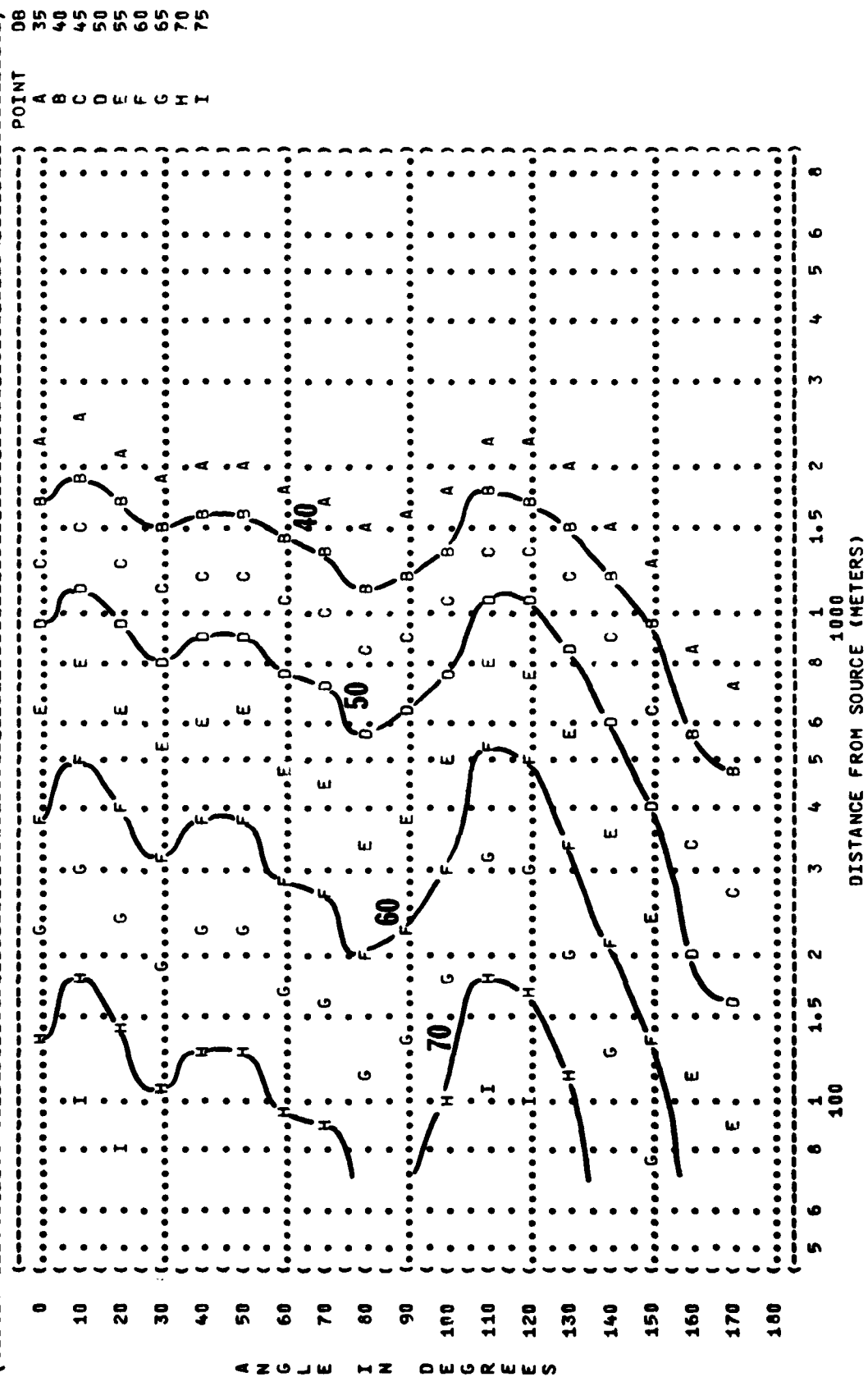
FIGURE 10 SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
500 HZ OCTAVE BAND

FIGURE: SOUND PRESSURE LEVEL (SPL)
EQUAL LEVEL CONTOURS (DB)
500 HZ OCTAVE BAND
10

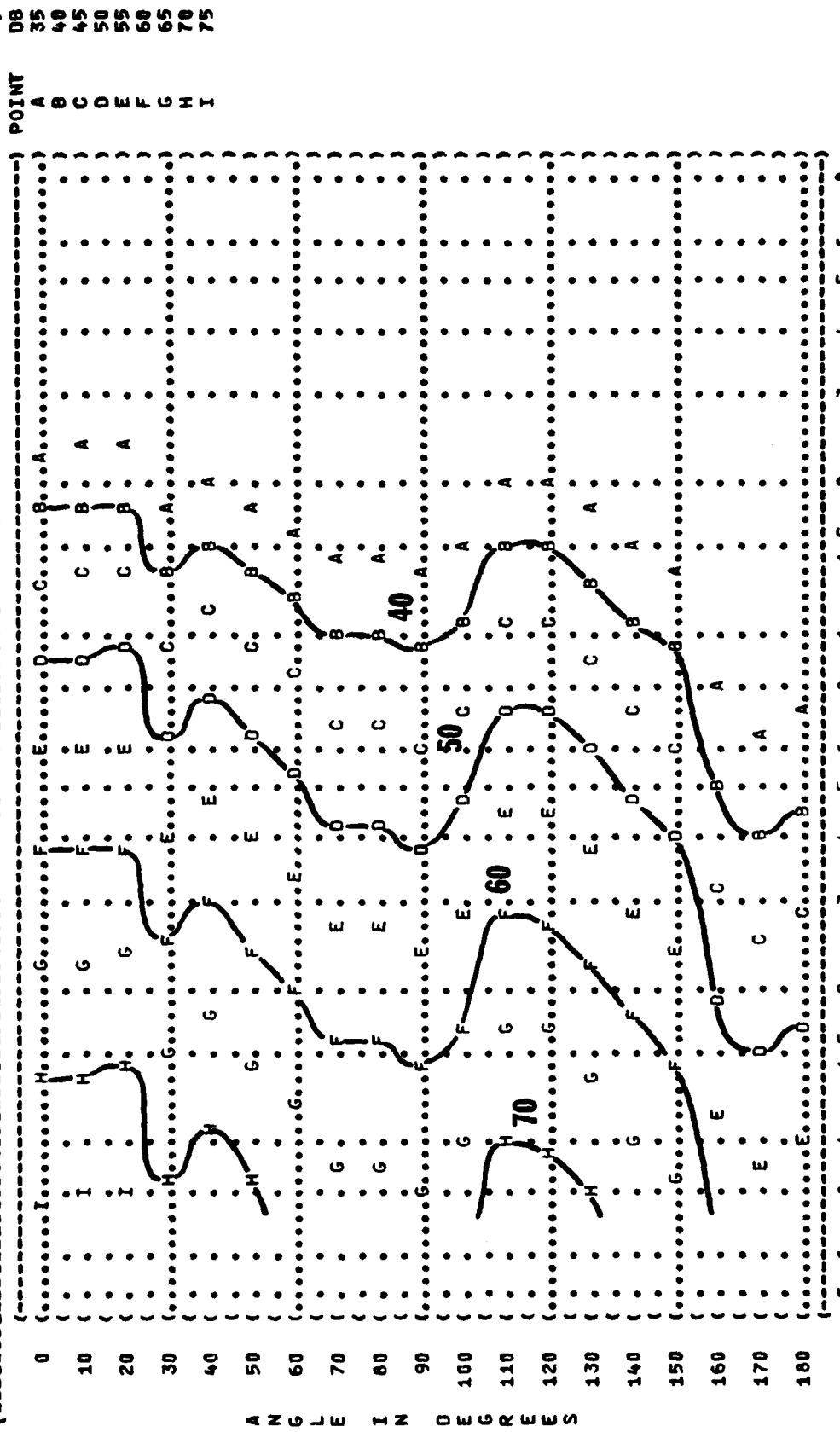
NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY:) IDENTIFICATION:
(IDLE POWER) TEMP = 15 C)
(63% RPM) BAR PRESS = .760 M HG)
(SINGLE ENGINE) REL HUMID = 79 %)
(FREE FLOW))

F-18 AIRCRAFT
F404-GE-400
FAR FIELD NOISE

OMEGA 1.4
TEST AM-007-00
PUN 01
22 MAR 79
PAGE 22

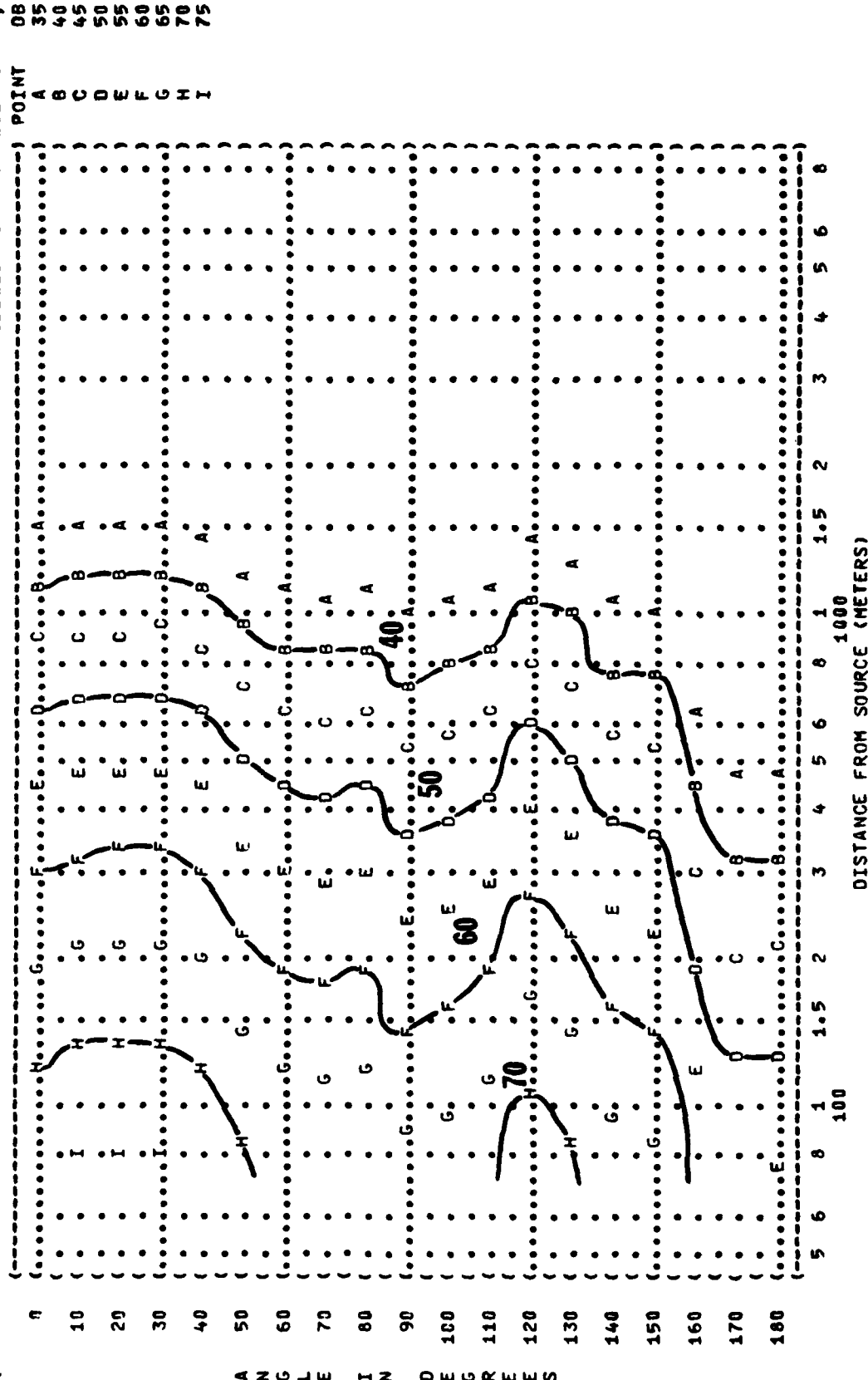


(FIGURE: SOUND PRESSURE LEVEL (SPL))
 (EQUAL LEVEL CONTOURS (DB))
 (10 1000 HZ OCTAVE BAND)
 (NOISE SOURCE/SUBJECT:)
 (F-18 AIRCRAFT)
 (F404-GE-400)
 (FAR FIELD NOISE)
 (OPERATIONS:)
 (IDLE POWER)
 (63% RPM)
 (SINGLE ENGINE)
 (FREE FLOW)
 (METEOROLOGY:)
 (TEMP = 15 C)
 (BAR PRESS = .760 M HG)
 (REL HUMID = 70 %)
 (IDENTIFICATION:)
 (OMEGA 1.4)
 (TEST AM-007-001)
 (RUN 01)
 (22 MAR 79)
 (PAGE 23)

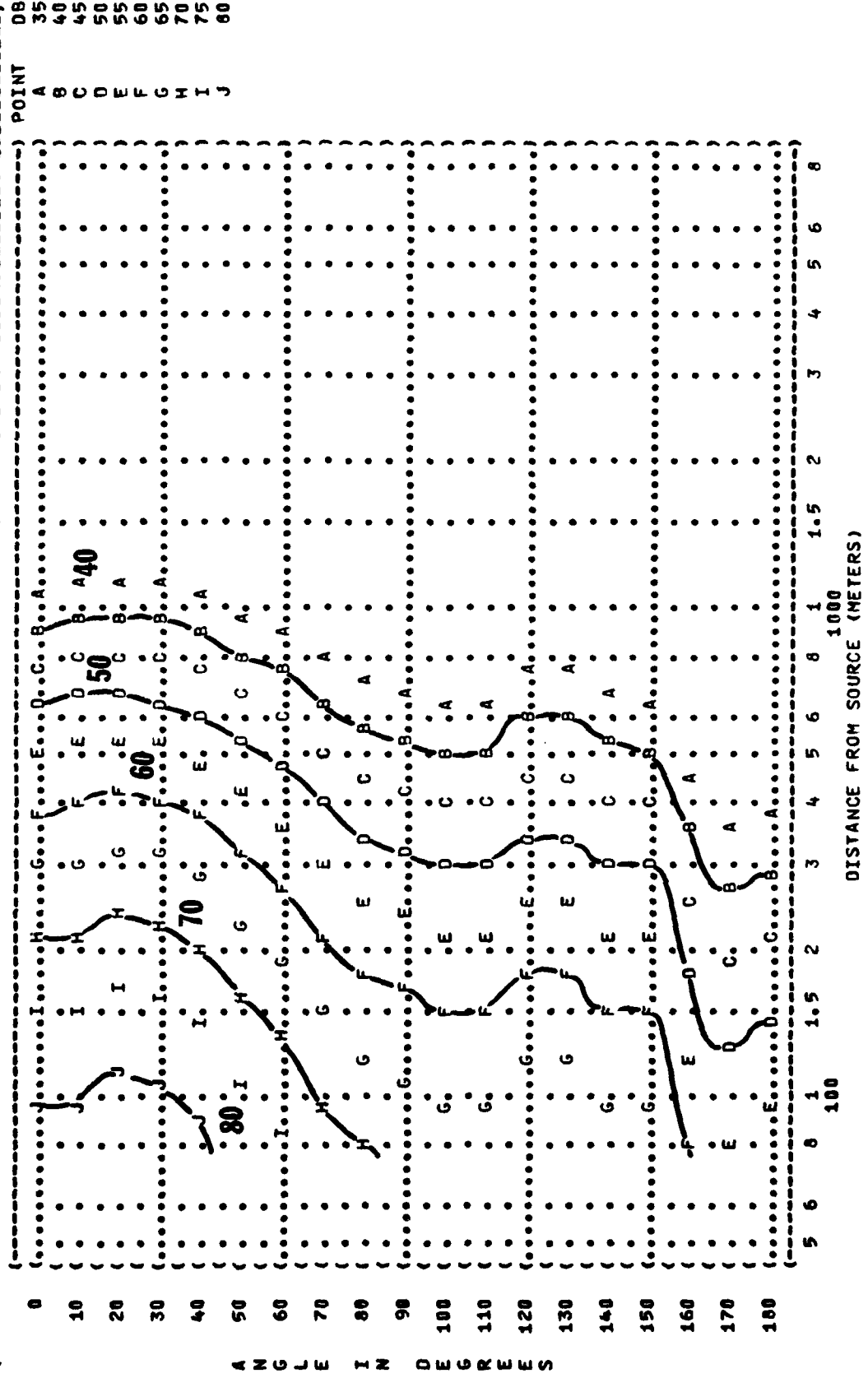


DB 35
 40
 45
 50
 55
 60
 65
 70
 75
 POINT A B C D E F G H I
 DISTANCE FROM SOURCE (METERS)

(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (10 EQUAL LEVEL CONTOURS (DB)
 (2000 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (F-10 AIRCRAFT (IDLE POWER
 (F404-GE-490 (63% RPM
 (FAR FIELD NOISE (SINGLE ENGINE
 ((FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST AM-007-001
 (RUN 01
 (22 MAR 79
 (PAGE 24

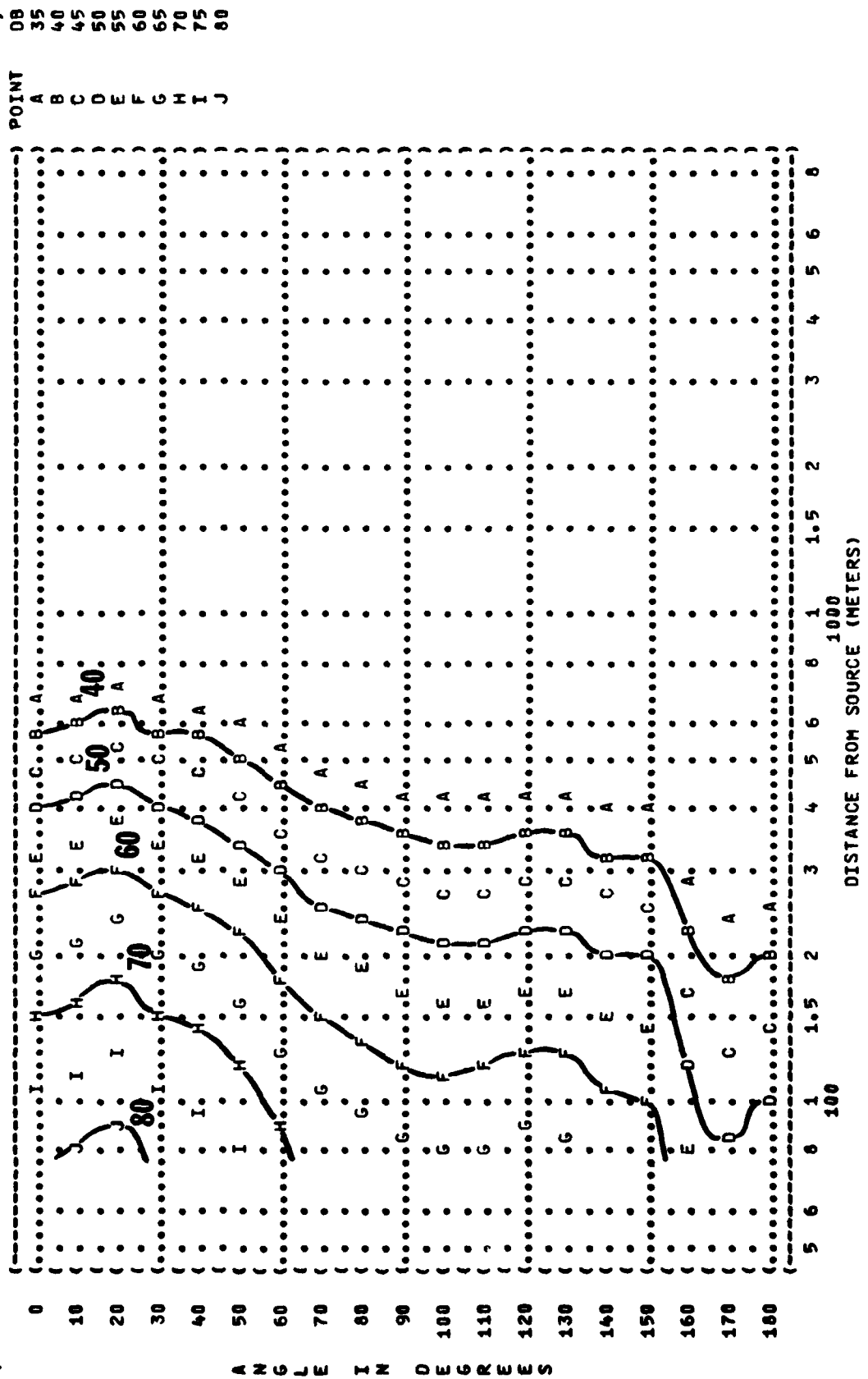


IDENTIFICATION: OMEGA 1.4
 TEST AN-007-001
 RUN 01
 METEOROLOGY: TEMP = 15 C
 BAR PRESS = .760 M HG
 REL HUMID = 70 %
 22 MAR 79
 PAGE 25

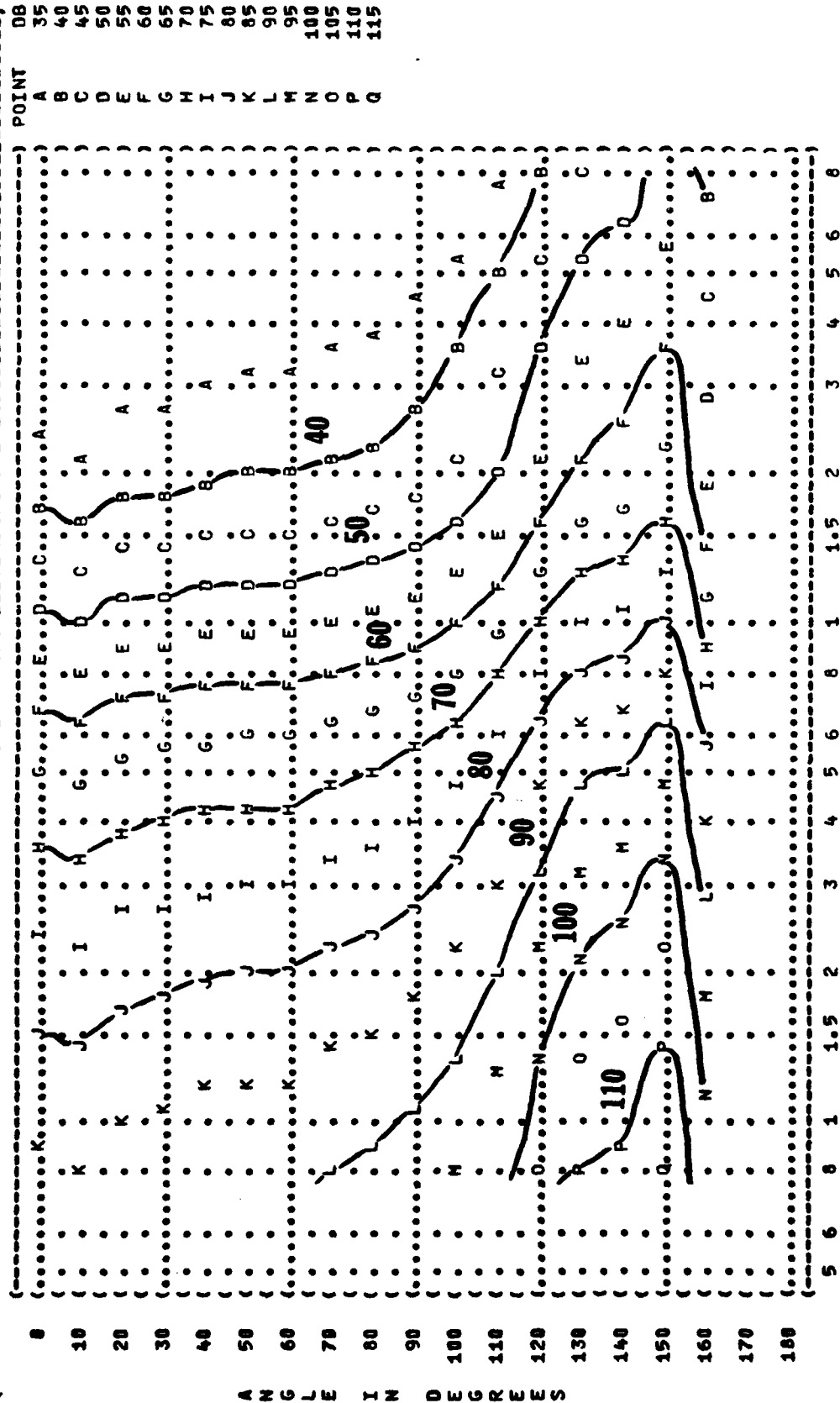


A N G L E I N D E G R E E S

(FIGURE: SOUND PRESSURE LEVEL (SPL)) IDENTIFICATION:)
 (10 EQUAL LEVEL CONTOURS (DB)) OMEGA 1.4)
 (8000 HZ OCTAVE BAND) TEST AM-907-C01)
 (NOISE SOURCE/SUBJECT:) OPERATION:) METEOROLOGY:)
 () IDLE POWER) TEMP = 15 C)
 (F-18 AIRCRAFT) 63% RPM) BAR PRESS = .760 M HG)
 (F404-GE-400) SINGLE ENGINE) REL HUMID = 70 %)
 (FAR FIELD NOISE) FREE FLOW) PAGE 26)

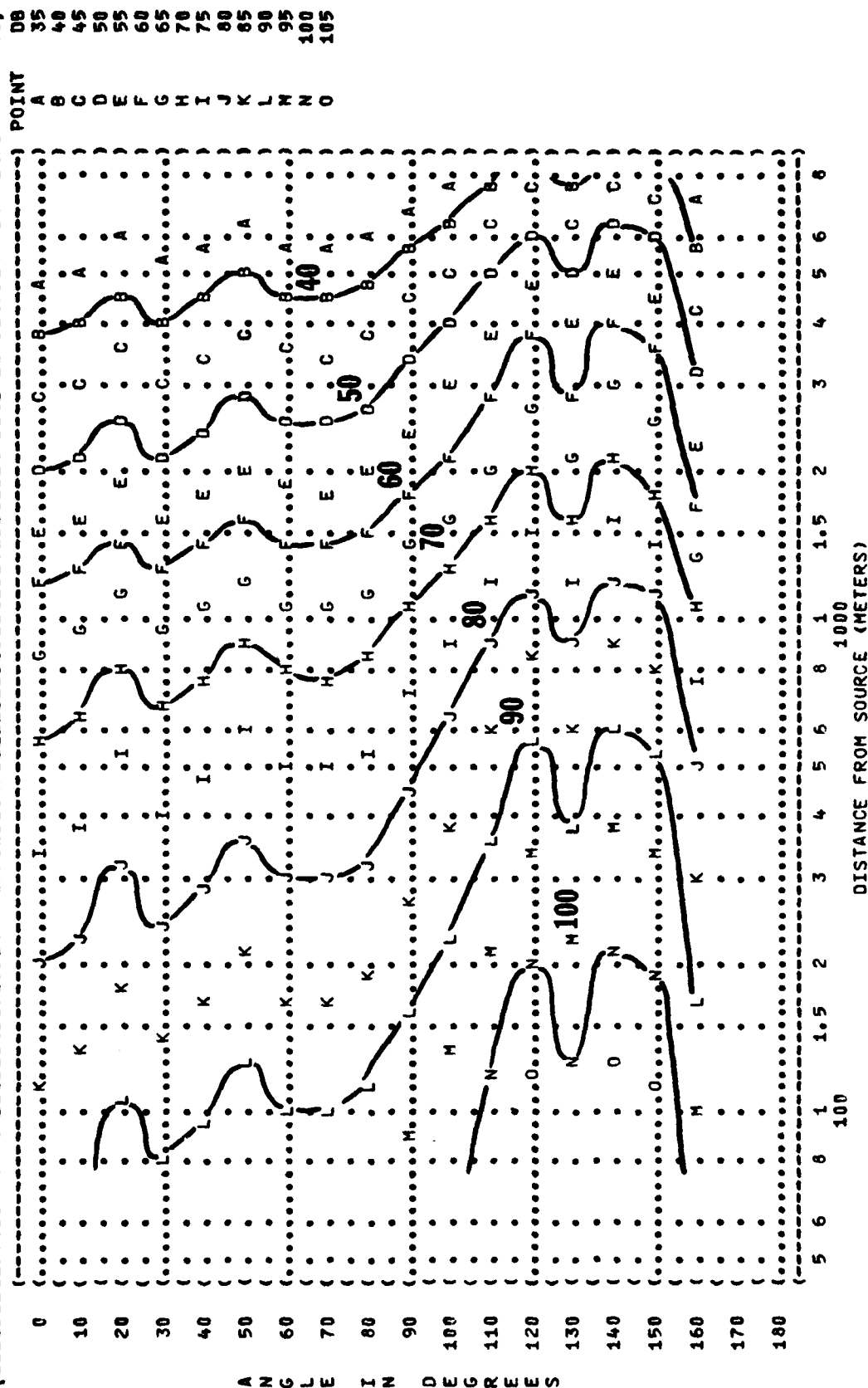


) IDENTIFICATION:)
) OMEGA 1.4)
) TEST AM-007-001)
) RUN 02)
)
) METEOROLOGY:)
) TEMP = 15 C)
) BAR PRESS = .760 M HG)
) REL HUMID = 70 %)
)
) OPERATION:)
) 85% RPM)
) SINGLE ENGINE)
) FREE FLOW)
)
) F-16 AIRCRAFT)
) F404-GE-400)
) FAR FIELD NOISE)
) PAGE 20)

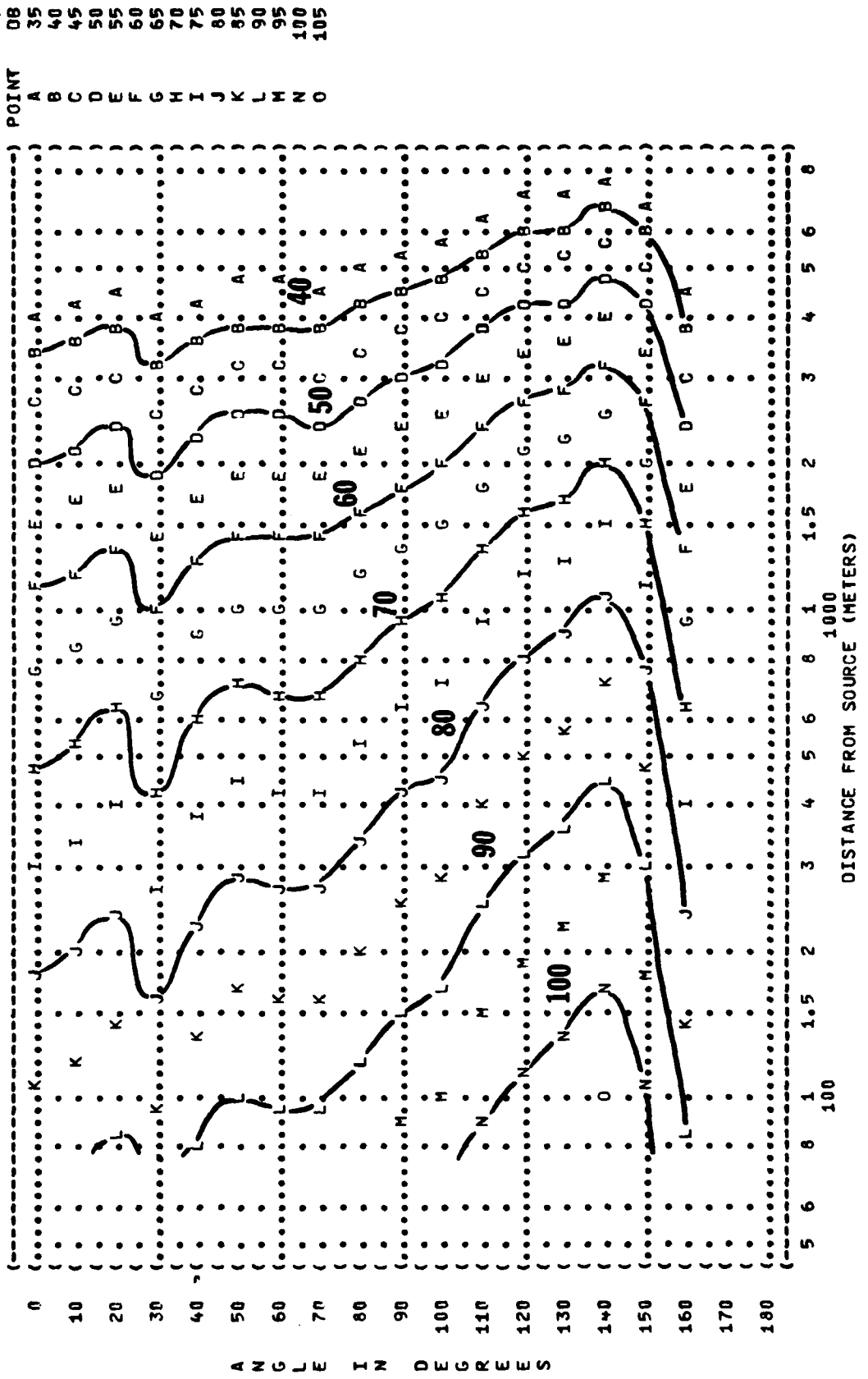


A N G L E I N D E G R E E S


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(-----)
( FIGURE: SOUND PRESSURE LEVEL {SPL} ) IDENTIFICATION: )
( EQUAL LEVEL CONTOURS (DB) ) )
( 10 ) OMEGA 1.4 )
( 500 HZ OCTAVE BAND ) TEST AM-007-001 )
( NOISE SOURCE/SUBJECT: ) METEOROLOGY: ) RUN 02 )
( ) TEMP = 15 C ) )
( F-18 AIRCRAFT ) BAR PRESS = .760 M HG ) 22 MAR 79 )
( F404-GE-400 ) SINGLE ENGINE ) ) )
( FAR FIELD NOISE ) FREE FLOW ) PAGE 22 )
(-----)
```



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (10 1000 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (F-16 AIRCRAFT (85% RPM
 (F404-GE-400 (SINGLE ENGINE
 (FAR FIELD NOISE (FREE FLOW
 (METEOROLOGY: (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (RUN 02
 (PAGE 23
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST AM-007-001
 (22 MAR 79
 ()



AD-A002 654

AEROSPACE MEDICAL RESEARCH LAB WRIGHT-PATTERSON AFB OH F/G 1/2
USAF BIOENVIRONMENTAL NOISE DATA HANDBOOK. VOLUME 141. F/A-18 A-ETC(U)
JUL 79 R 6 POWELL

UNCLASSIFIED

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IDENTIFICATION:
OMEGA 1.4
TEST AM-007-001

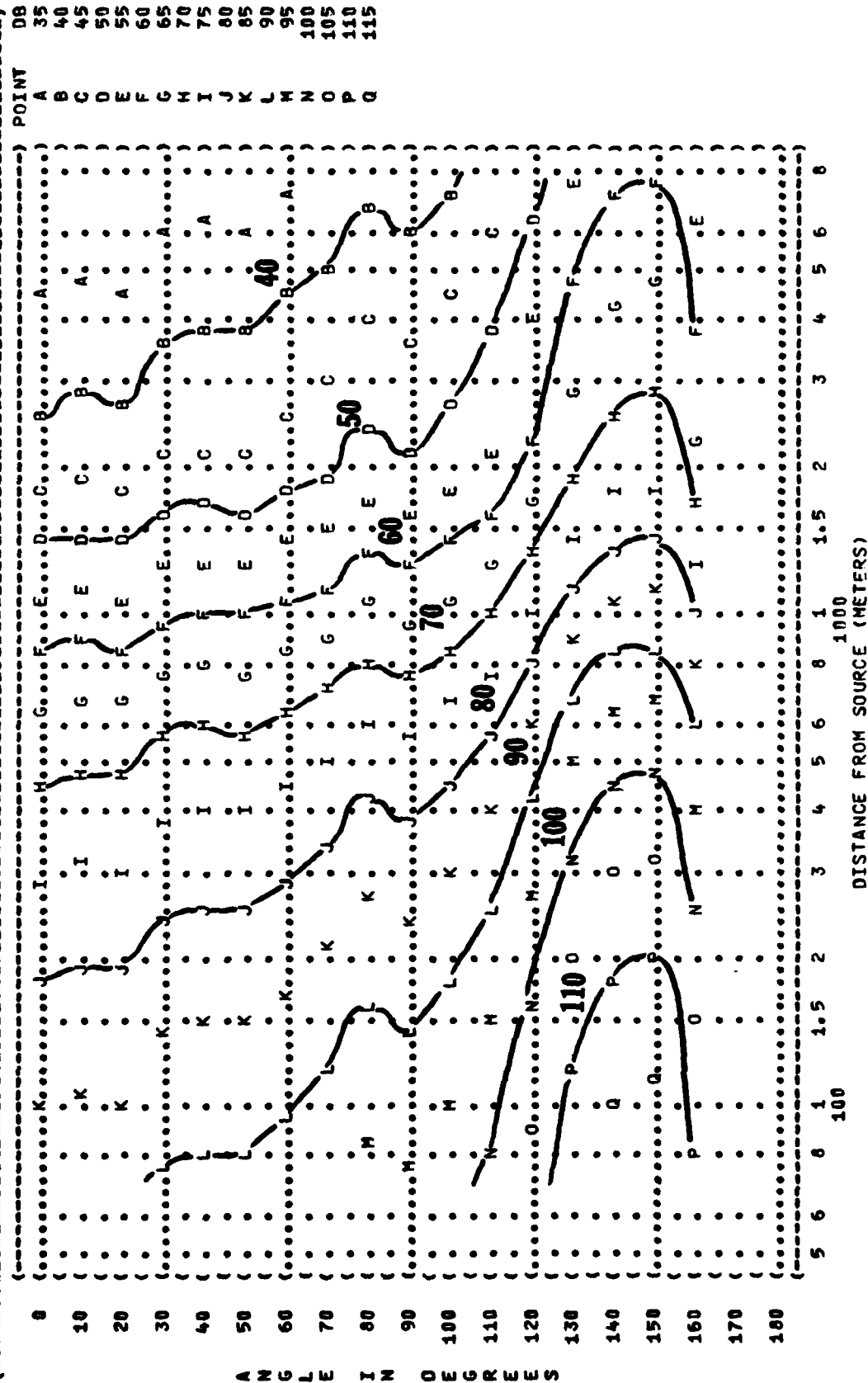
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TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

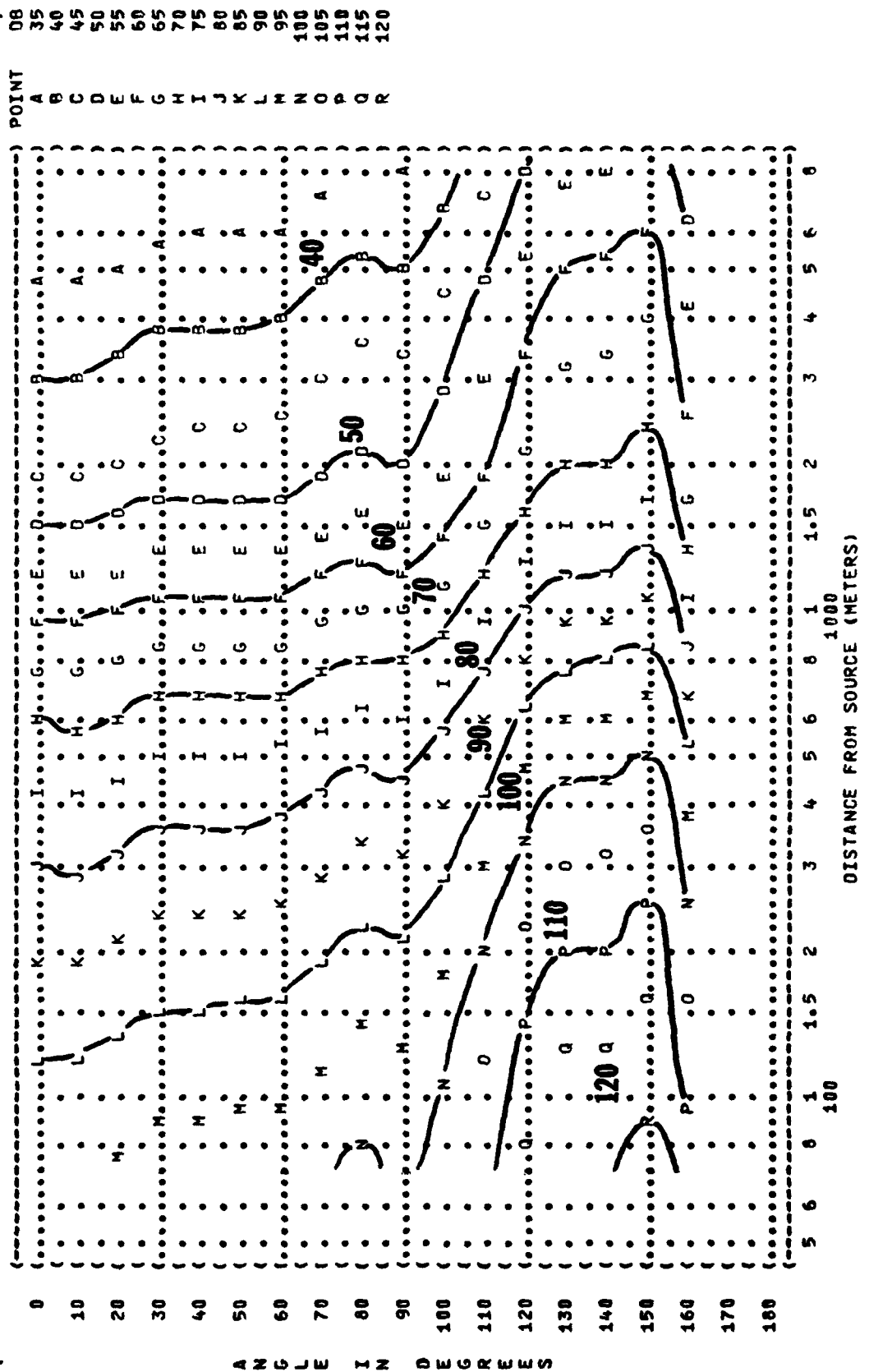
POINT

DISTANCE FROM SOURCE (METERS)

```
(-----)
( ) FIGURE: SOUND PRESSURE LEVEL {SPL}
( ) EQUAL LEVEL CONTOURS (DB)
( ) 10
( ) 63 HZ OCTAVE BAND
( ) NOISE SOURCE/SUBJECT:
( ) OPERATION:
( ) MILITARY POWER
( ) 94% RPM
( ) SINGLE ENGINE
( ) FREE FLOW
( ) F-18 AIRCRAFT
( ) F404-GE-400
( ) FAR FIELD NOISE
( ) METEOROLOGY:
( ) TEMP = 15 C
( ) BAR PRESS = .760 M HG
( ) REL HUMID = 70 %
( ) PAGE 19
( ) IDENTIFICATION:
( ) OMEGA 1.4
( ) TEST AM-007-001
( ) RUN 03
```

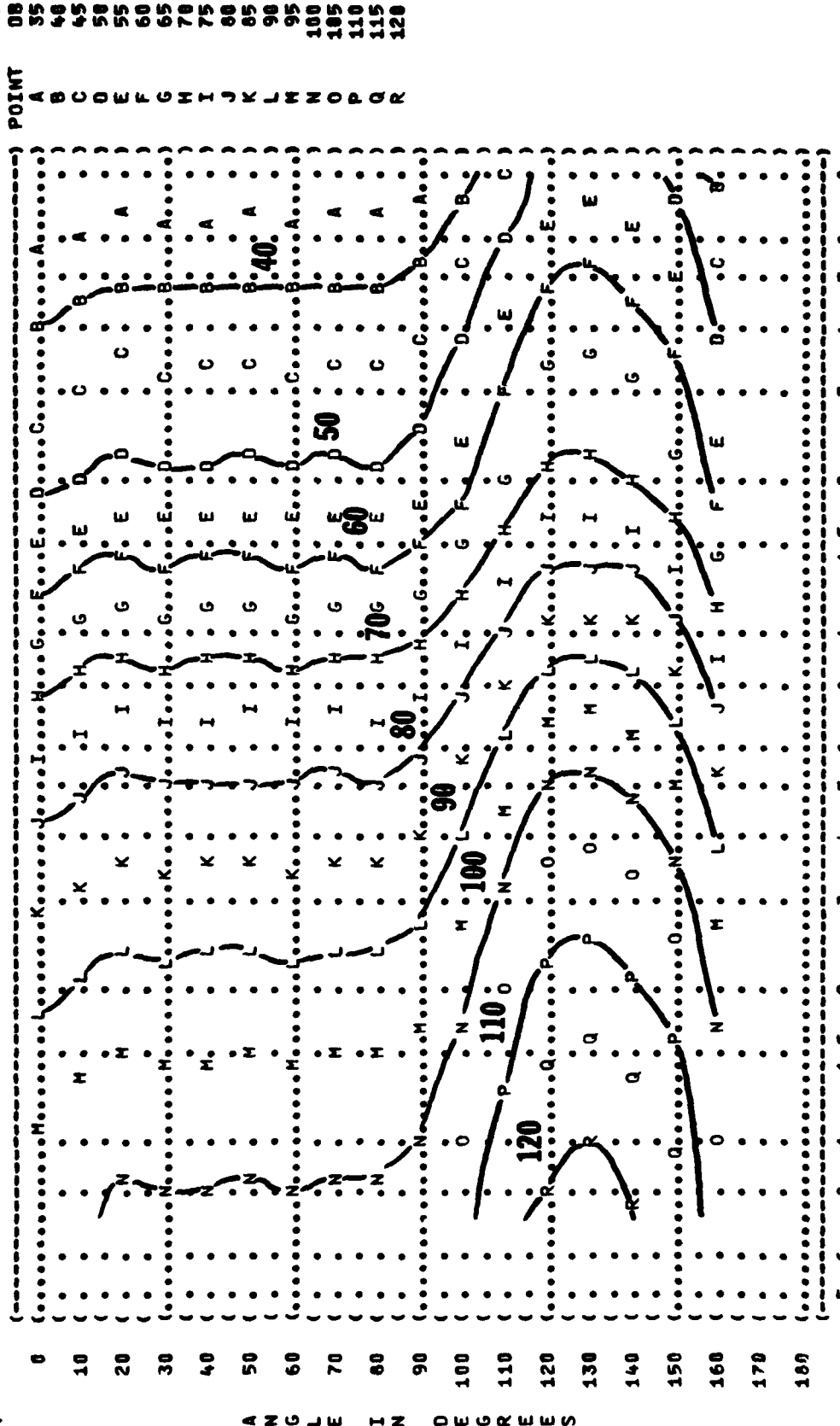


(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (10 125 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION: (METEOROLOGY:
 (F-10 AIRCRAFT (MILITARY POWER (TEMP = 15 C
 (F404-GE-400 (94% RPM (BAR PRESS = .760 M HG
 (FAR FIELD NOISE (SINGLE ENGINE (REL HUMID = 70 %
 ((FREE FLOW () PAGE 20
 () IDENTIFICATION:
 () OMEGA 1.4
 () TEST AM-007-C01
 () RUN 03



A N G L E I N D E G R E E S

(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (10 250 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 ((MILITARY POWER
 ((94% RPM
 ((SINGLE ENGINE
 ((FREE FLOW
 (F-18 AIRCRAFT
 (F404-GE-400
 (FAR FIELD NOISE
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (RUN 03
 (22 MAR 79
 (PAGE 21
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST AM-007-001

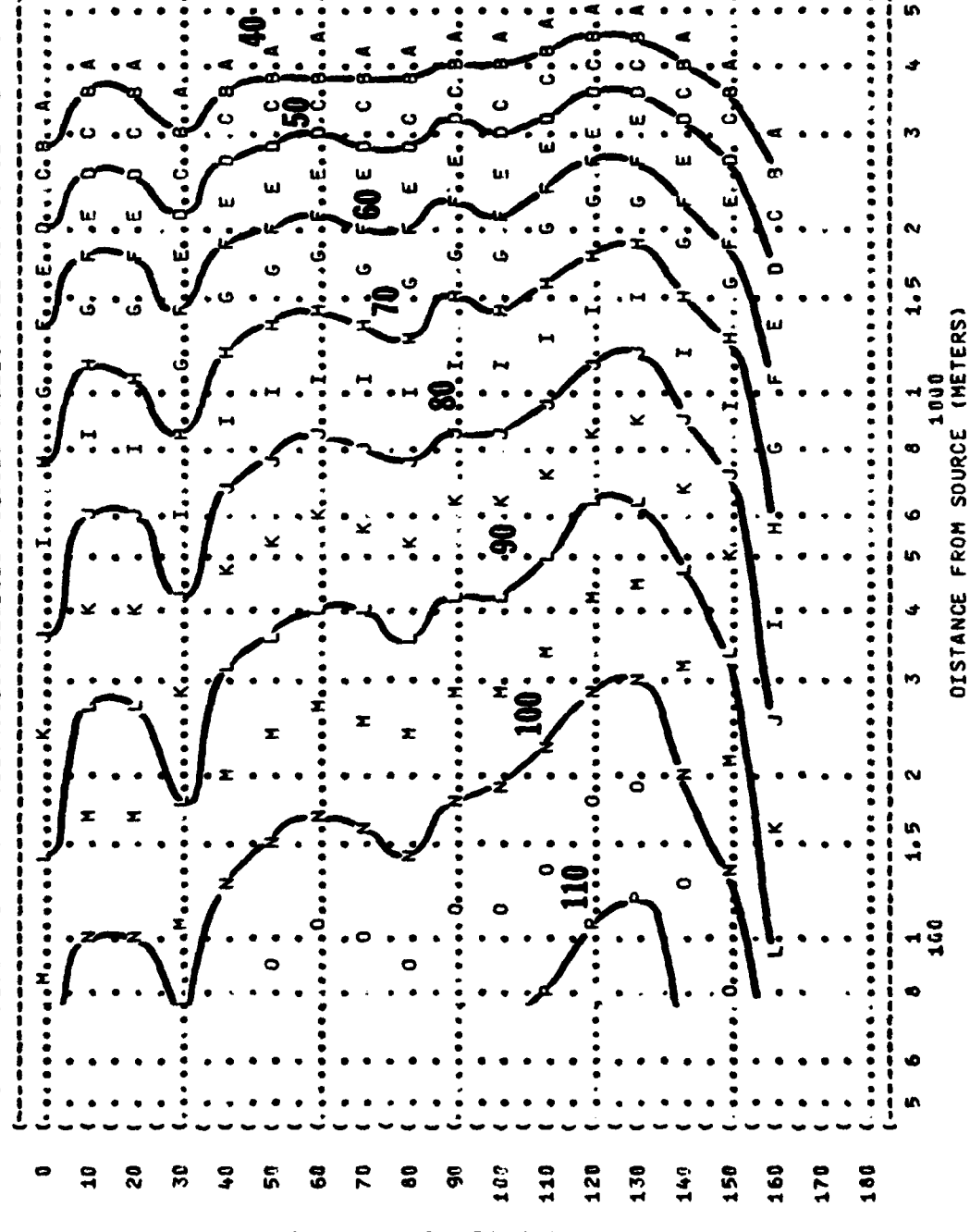


(FIGURE:	SOUND PRESSURE LEVEL {SPL}) IDENTIFICATIONS:
(EQUAL LEVEL CONTOURS (DB)))
(10	500 HZ OCTAVE BAND) OMEGA 1.4

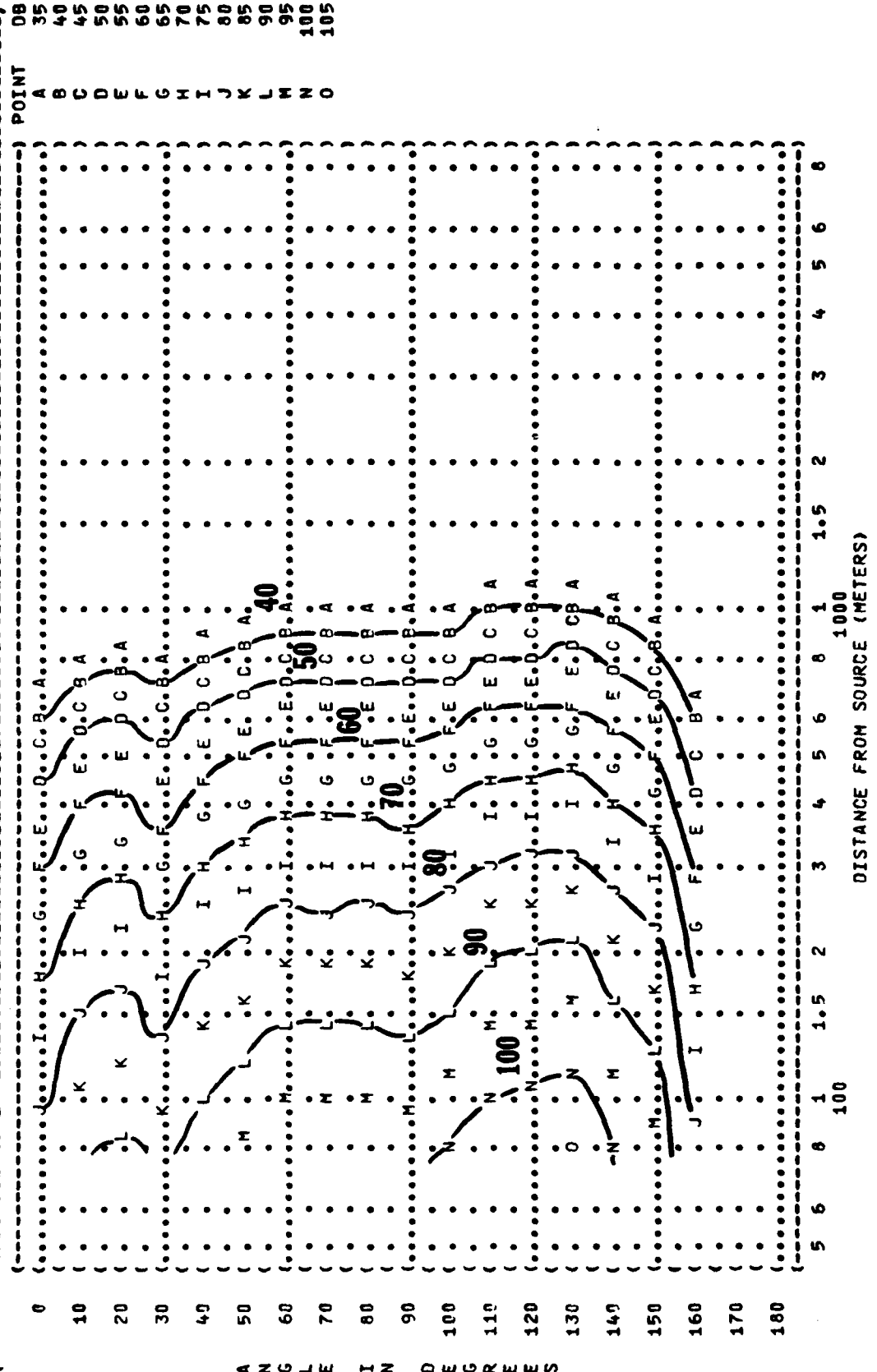
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((MILITARY POWER	TEMP = 15 C) RUN 93
(F-18 AIRCRAFT	(94% RPM) BAR PRESS = .760 M HG))
(F404-GE-400	(SINGLE ENGINE) REL HUMID = 70 %) 22 MAR 79
(FAR FIELD NOISE	(FREE FLOW))) PAGE 22



NOISE SOURCE/SUBJECT:
F-10 AIRCRAFT
F404-GE-400
FAR FIELD NOISE



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (10 8000 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY:
 (F-18 AIRCRAFT (MILITARY POWER) TEMP = 15 C
 (F404-GE-400 (94% RPM) BAR PRESS = .760 M HG
 (FAR FIELD NOISE (SINGLE ENGINE) REL HUMID = 70 %
 (FREE FLOW)
 (IDENTIFICATION:)
 ()
 () OMEGA 1.4
 () TEST AM-007-001
 () RUN 03
 () 22 MAR 79
 () PAGE 26



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (10 EQUAL LEVEL CONTOURS (DB)
 (31.5 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (F-18 AIRCRAFT (AFTERBURNER POWER
 (F404-GE-400 (MINIMUM SETTING
 (FAR FIELD NOISE (SINGLE ENGINE
 (FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 H HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST AM-007-001
 (RUN 04
 (22 MAR 79
 (PAGE 18

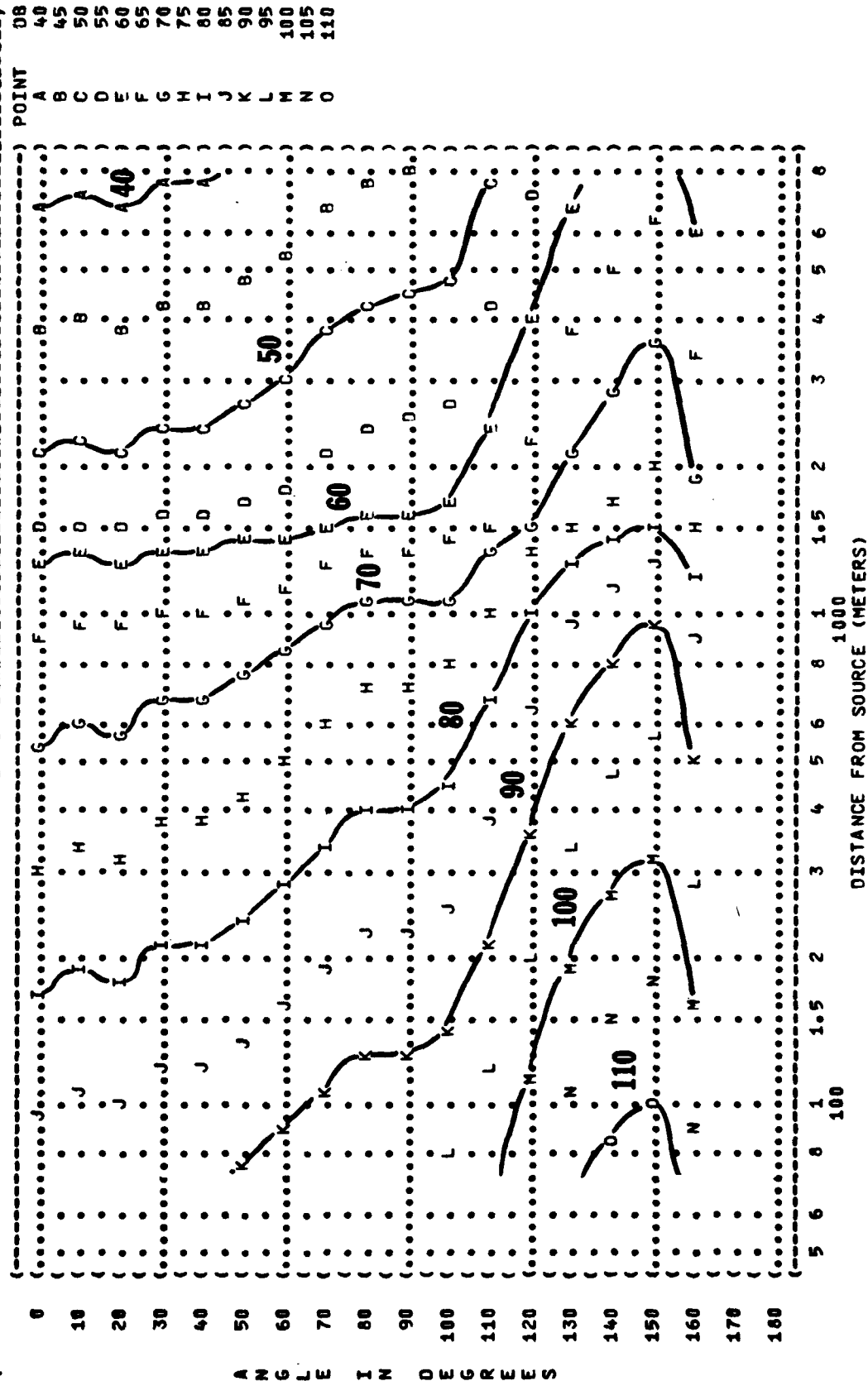
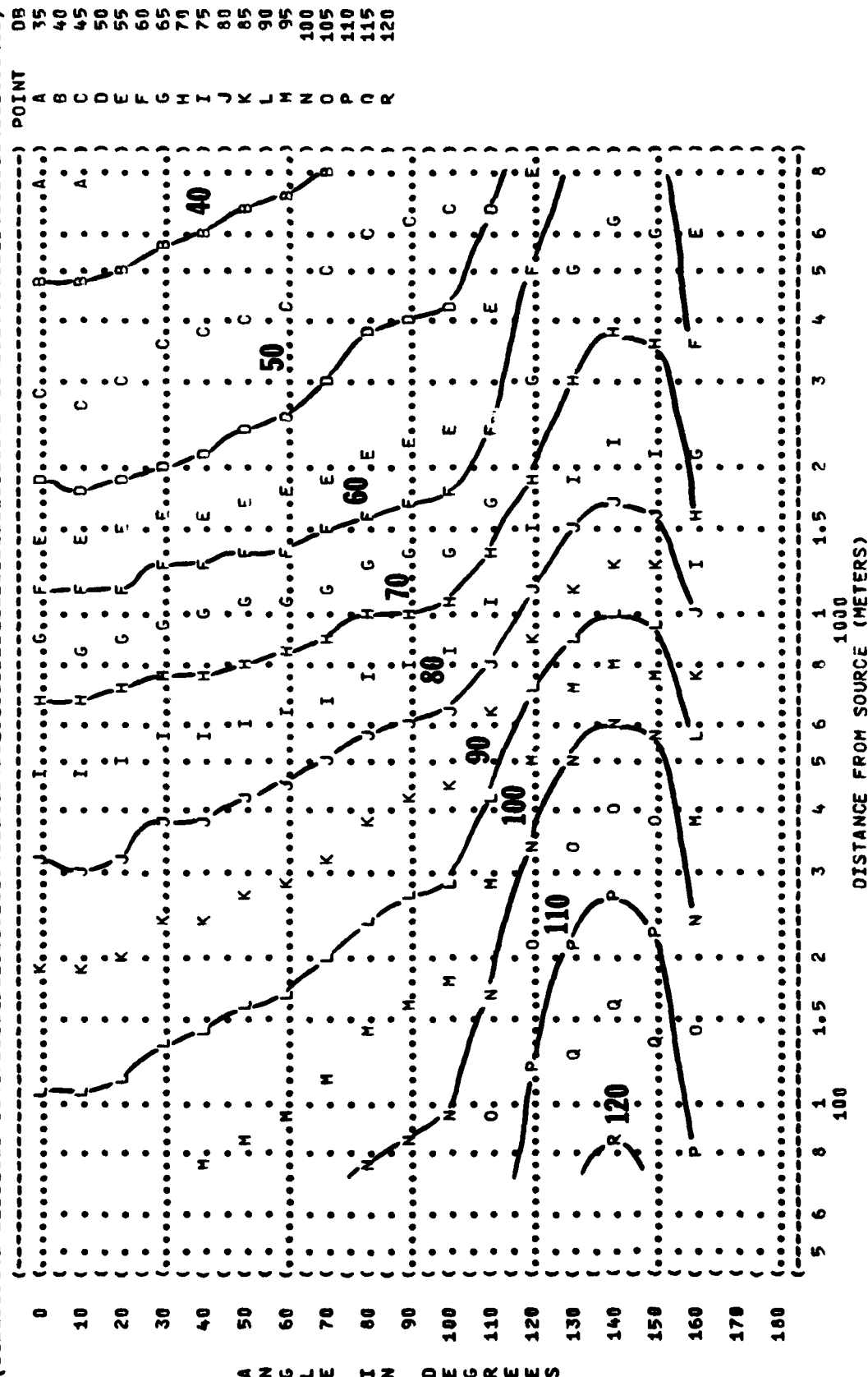


FIGURE:	SOUND PRESSURE LEVEL (SPL)	EQUAL LEVEL CONTOURS (DB)	63 HZ OCTAVE BAND	IDENTIFICATION:
10				OMEGA 1.4
				TEST AN-007-001
NOISE SOURCE/SUBJECT:	OPERATION:	METEOROLOGY:		RUN 04
F-10 AIRCRAFT	AFTERBURNER POWER	TEMP = 15 C		
F404-GE-400	MINIMUM SETTING	BAR PRESS = .760 M HG		22 MAR 79
FAR FIELD NOISE	SINGLE ENGINE	REL HUMID = 70 %		
	FREE FLOW			PAGE 19



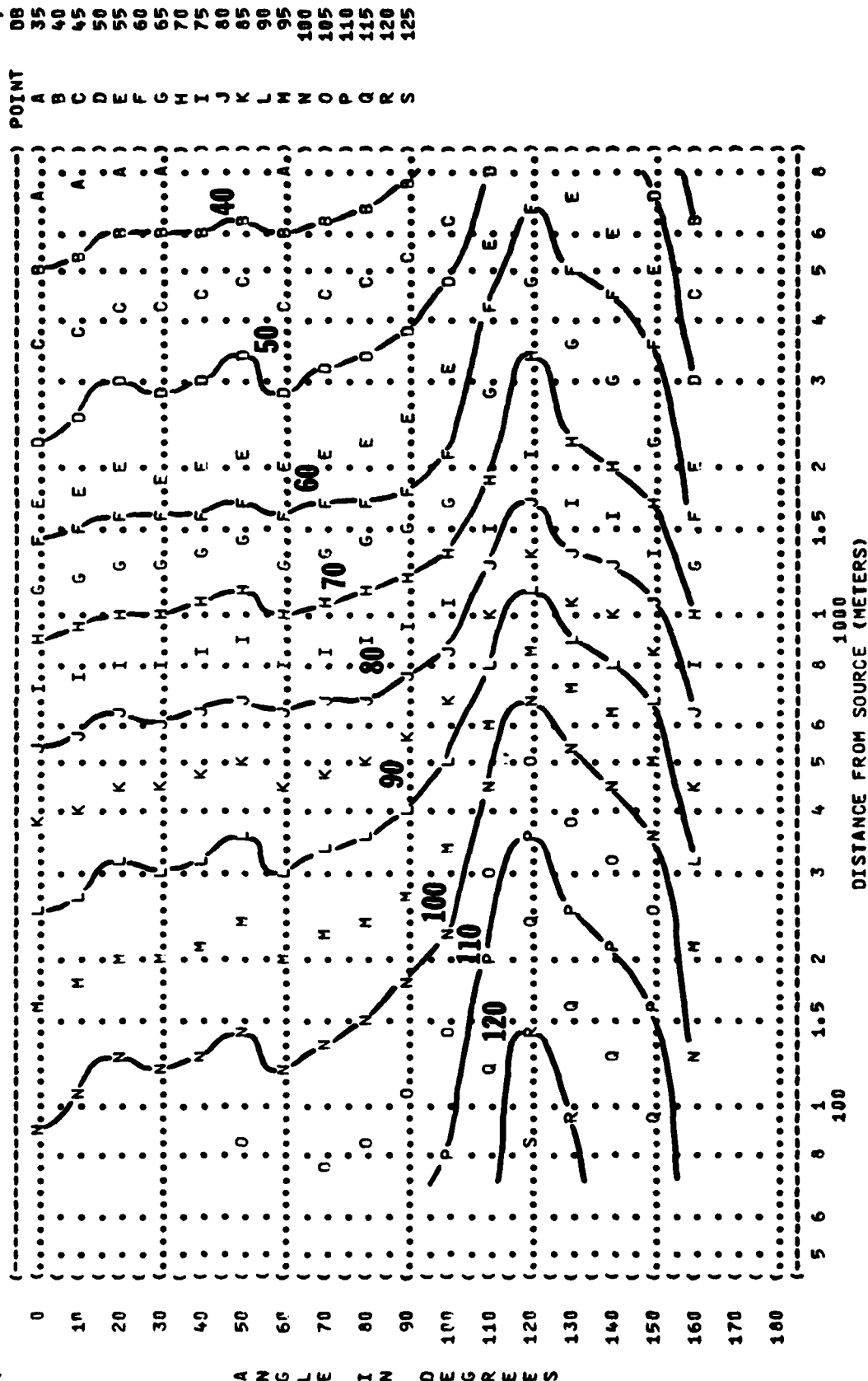
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(FIGURE: SOUND PRESSURE LEVEL {SPL}
(EQUAL LEVEL CONTOURS (DB)
(10
(250 HZ OCTAVE BAND

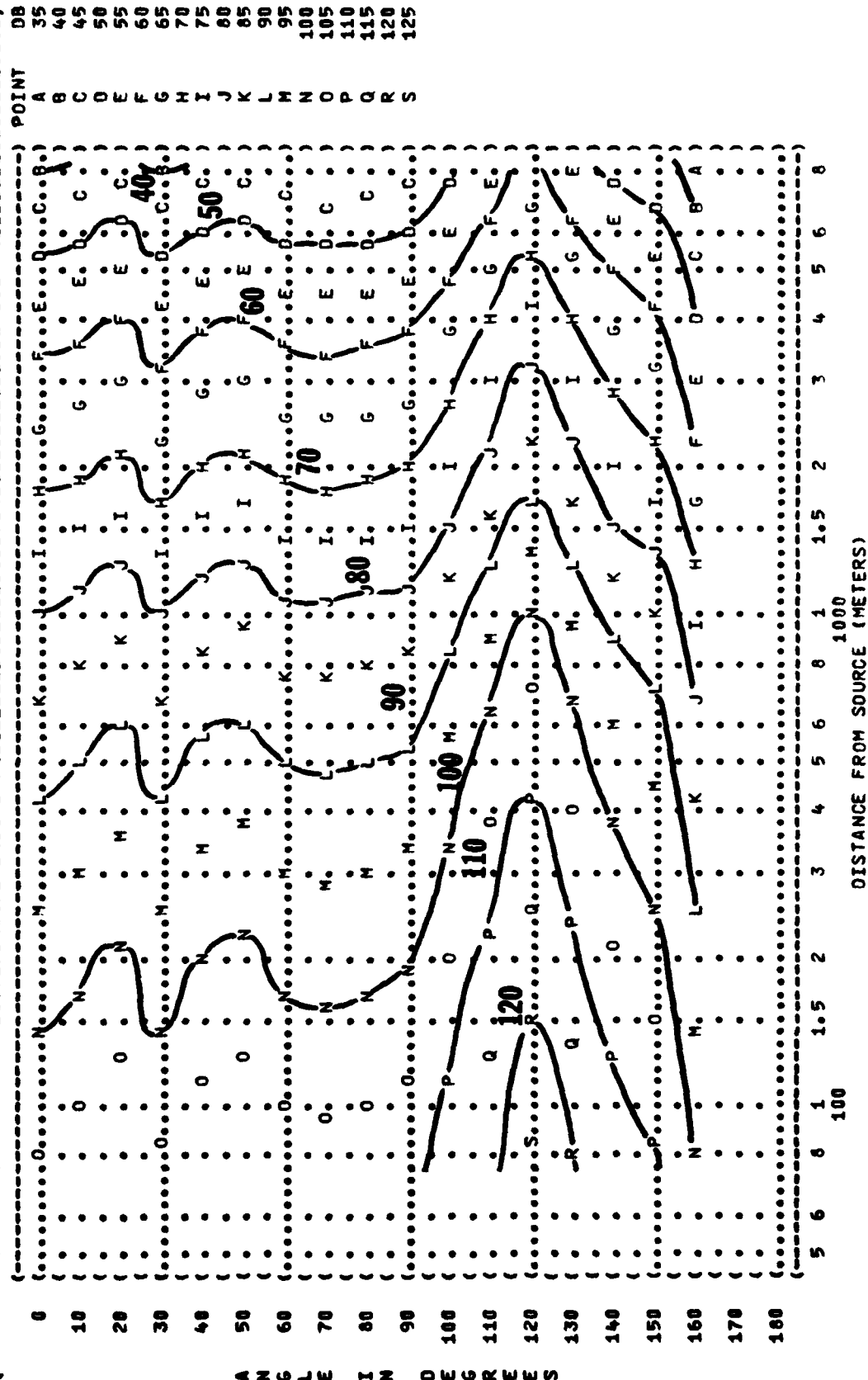
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((AFTERBURNER POWER
((MINIMUM SETTING
(F-18 AIRCRAFT
(F404-GE-400 (SINGLE ENGINE
(FAR FIELD NOISE (FREE FLOW

(METEOROLOGY: TEMP = 15 C
(BAR PRESS = .760 M HG
(REL HUMID = 70 %

(IDENTIFICATION:
()
() OMEGA 1.4
() TEST AM-007-001
() RUN 04
() 22 MAR 79
() PAGE 21



(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (10 500 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 ((AFTERBURNER POWER
 ((MINIMUM SETTING
 ((SINGLE ENGINE
 ((FREE FLOW
 (F-18 AIRCRAFT
 (F404-GE-400
 (FAR FIELD NOISE
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (PAGE 22
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST AM-007-001
 (RUN 04
 (22 MAR 79



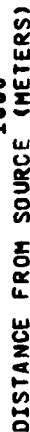
IDENTIFICATION:
OMEGA 1.4
TEST AM-007-001
RUN 04
22 MAR 79
PAGE 23

METEOROLOGY:
TEMP = 15 C
BAR PRESS = .760 M HG
REL HUMID = 70 %

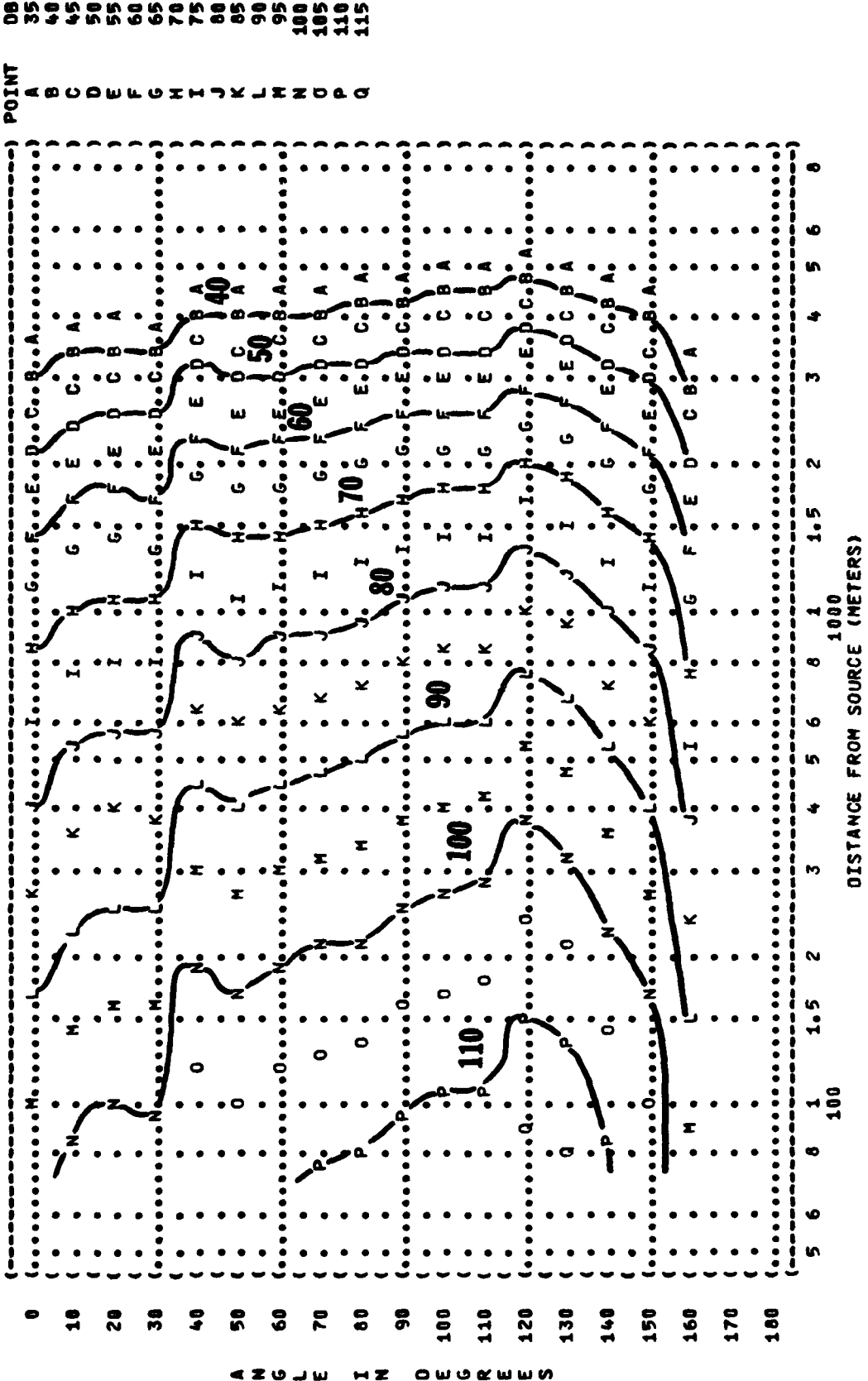
BAR PRESS = .760 M HG) 22 MAR 79
REL HUMID = 70 %)
PAGE 23)

SINGLE ENGINE
FREE FLOW) REL HUMID = 70 %
)

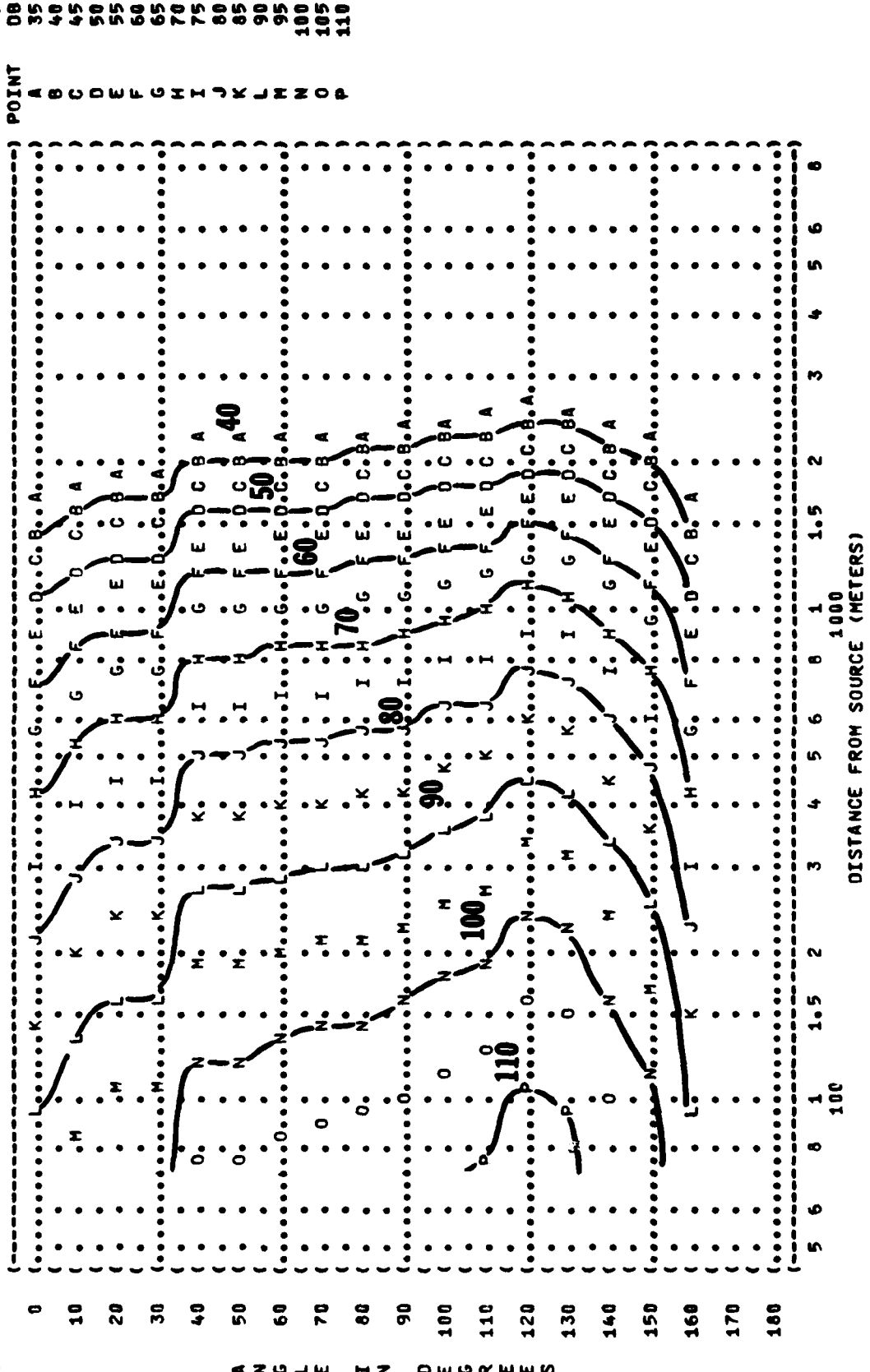
FREE FLOW



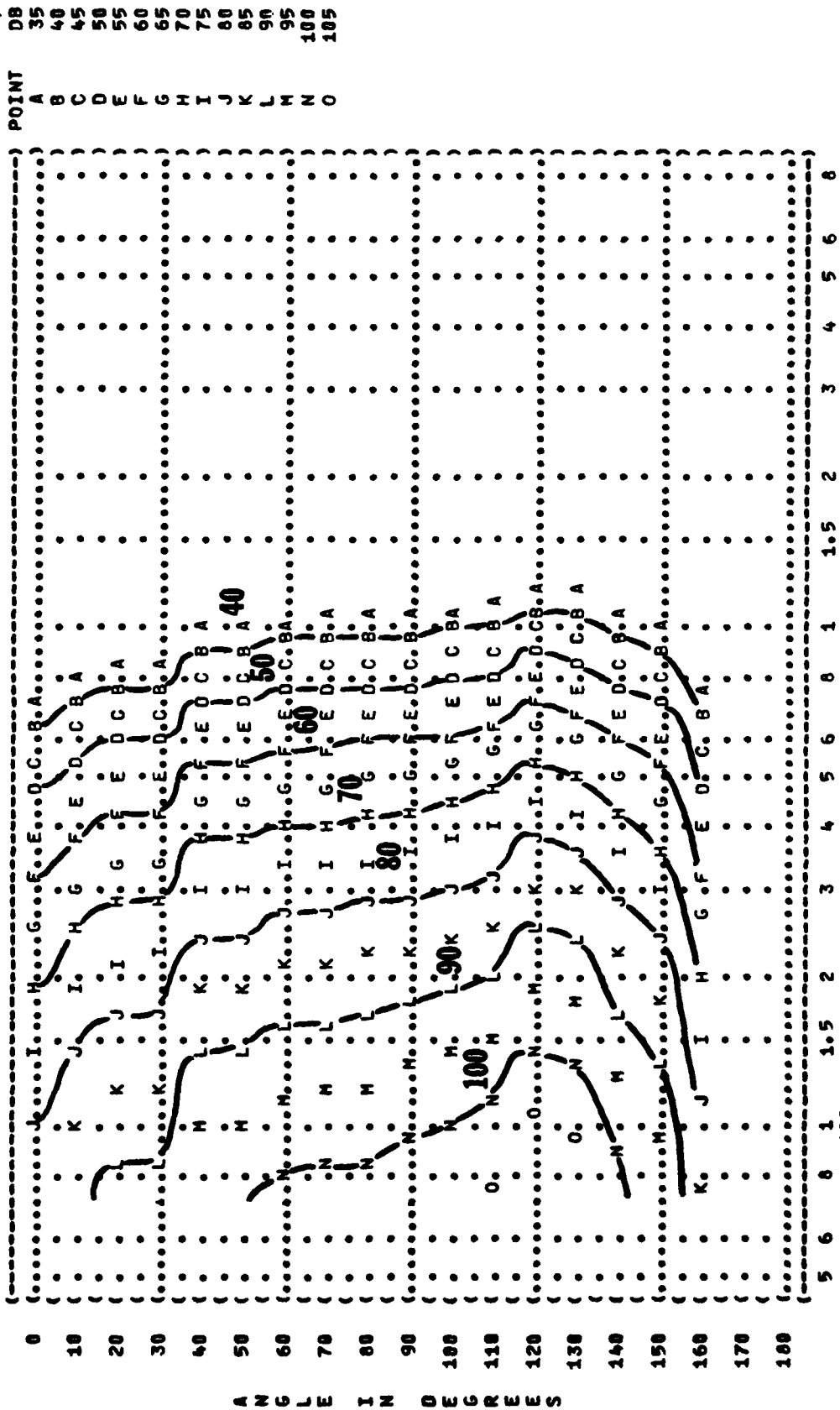
IDENTIFICATIONS: OMEGA 1.4
 TEST AM-007-001
 RUN 04
 METEOROLOGY: TEMP = 15 C
 BAR PRESS = .760 M HG
 REL HUMID = 70 %
 OPERATION: AFTERBURNER POWER
 MINIMUM SETTING
 SINGLE ENGINE
 FREE FLOW
 NOISE SOURCE/SUBJECT: F-18 AIRCRAFT
 F404-GE-400
 FAR FIELD NOISE



(FIGURE: SOUND PRESSURE LEVEL (SPL)) IDENTIFICATION:)
 (10 EQUAL LEVEL CONTOURS (DB)) OMEGA 1.4)
 (4300 HZ OCTAVE BAND) TEST AM-007-001)
 (NOISE SOURCE/SUBJECT:) OPERATION:) METEOROLOGY:)
 () AFTERBURNER POWER) TEMP = 15 C)
 (F-18 AIRCRAFT) MINIMUM SETTING) BAR PRESS = .760 M HG)
 (F404-GE-400) SINGLE ENGINE) REL HUMID = 70 %)
 (FAR FIELD NOISE) FREE FLOW) PAGE 25)

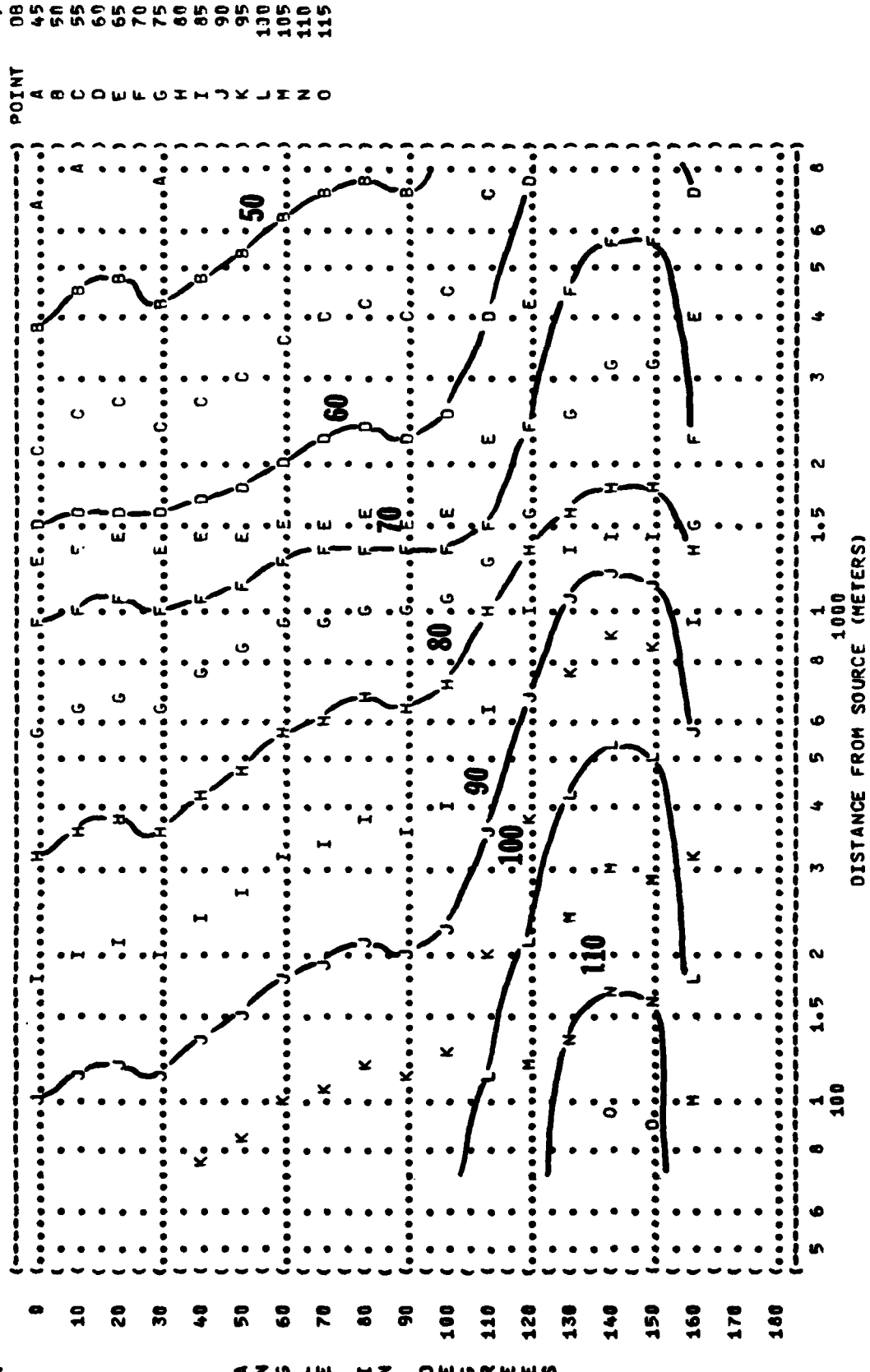


(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (10 EQUAL LEVEL CONTOURS (DB)
 (8000 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (F-18 AIRCRAFT (AFTERBURNER POWER
 (F404-GE-400 (MINIMUM SETTING
 (FAR FIELD NOISE (SINGLE ENGINE
 (FREE FLOW
 (METEOROLOGY:
 (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST AM-007-001
 (RUN 04
 (22 MAR 79
 (PAGE 26



A N G L E I M D E G R E E S

(FIGURE: SOUND PRESSURE LEVEL (SPL)
 (EQUAL LEVEL CONTOURS (DB)
 (10 31.5 HZ OCTAVE BAND
 (NOISE SOURCE/SUBJECT: (OPERATION:
 (F-16 AIRCRAFT (AFTERBURNER POWER
 (F404-GE-400 (MAXIMUM
 (FAR FIELD NOISE (SINGLE ENGINE
 ((FREE FLOW
 (METEOROLOGY: (TEMP = 15 C
 (BAR PRESS = .760 M HG
 (REL HUMID = 70 %
 (PAGE 18
 (IDENTIFICATION:
 (OMEGA 1.4
 (TEST AM-007-001
 (RUN 05



NOISE SOURCE/SUBJECT:
F-18 AIRCRAFT
F404-GE-400
FAR FIELD NOISE

0 10 20 30 40 50 60 70 80

A N G L E I

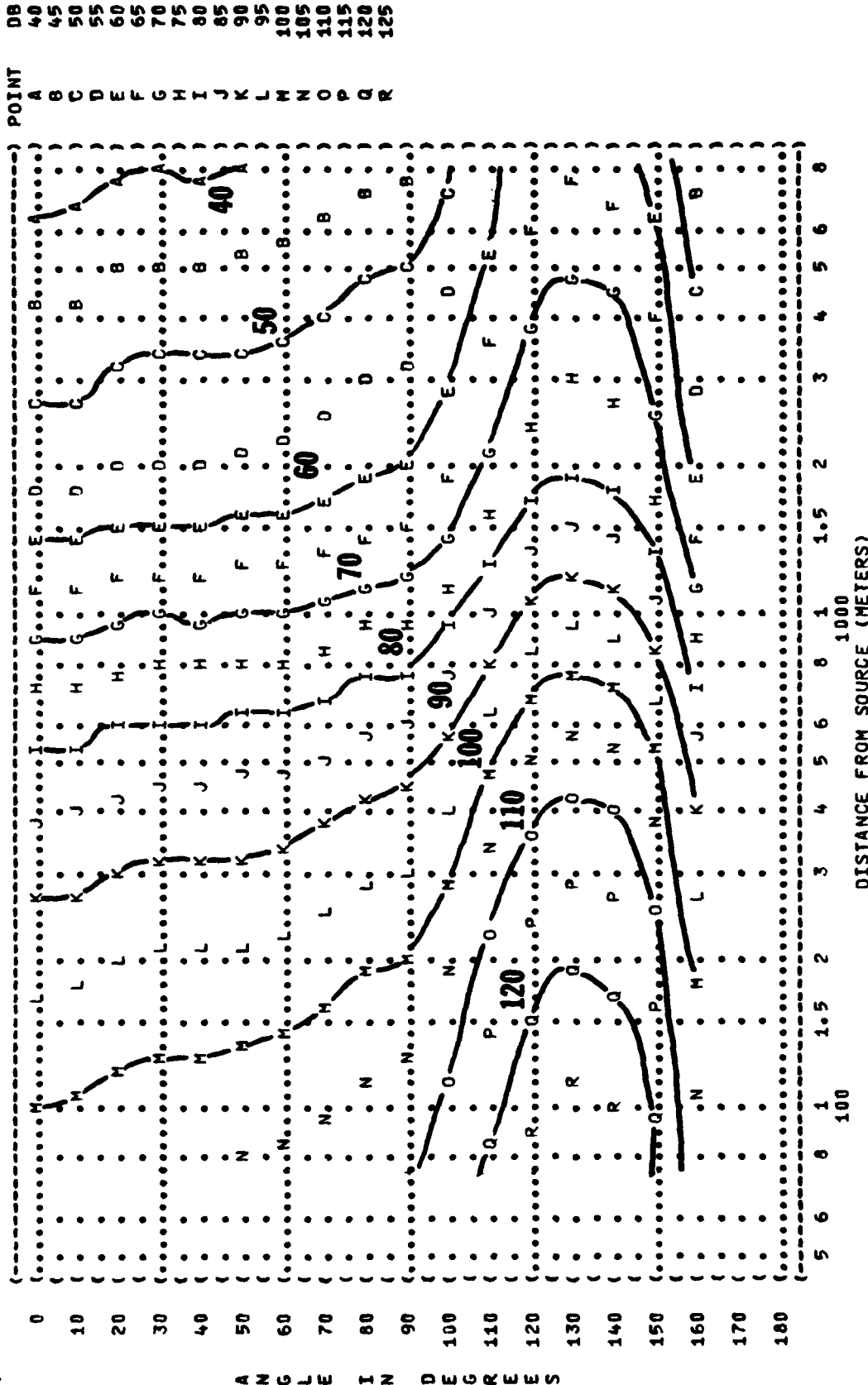
(---) POINT

40 45 50 55 60 65 70 75 80 85 90 95 100 105 110 115 120 125

A B C D E F G H I J K L M N O P Q R

DISTANCE FROM SOURCE (METERS)

(FIGURE: SOUND PRESSURE LEVEL (SPL))
 () IDENTIFICATION:)
 () OMEGA 1.4)
 (10')
 (125 HZ OCTAVE BAND)
 () TEST AM-007-001)
 () RUN 05)
 () METEOROLOGY:)
 () TEMP = 15 C)
 () BAR PRESS = .760 M HG)
 () REL HUMID = 70 %)
 () 22 MAR 79)
 () PAGE 20)
 ()
 (NOISE SOURCE/SUBJECT:)
 () OPERATION:)
 () AFTERBURNER POWER)
 () MAXIMUM)
 () SINGLE ENGINE)
 () FREE FLOW)
 () F-18 AIRCRAFT)
 () F404-GE-400)
 () FAR FIELD NOISE)



A N G L E I N D E G R E E S

IDENTIFICATION:
OMEGA 1.4
TEST AM-007-001

3) METEOROLOGY:

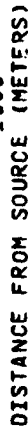
TEOROLOGY: = 15 C

BAR PRESS = .760 M HG

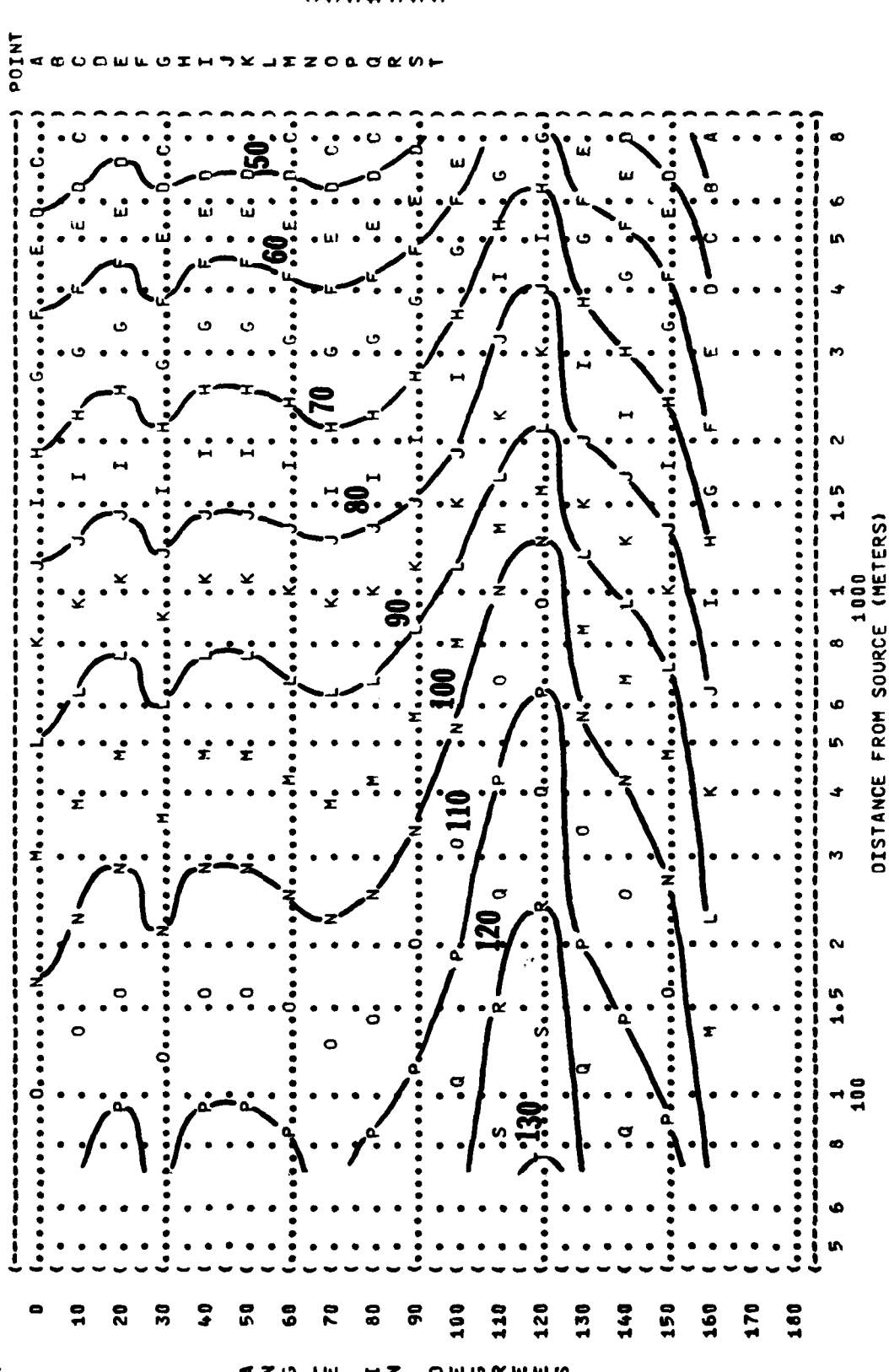
REL HUMID = 70 %

PAGE 21

INDY



NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY:)
 (AFTERBURNER POWER) TEMP = 15 C) RUN 05
 (MAXIMUM) BAR PRESS = .760 M HG)
 (SINGLE ENGINE) REL HUMID = 79 %) 22 MAR 79
 (FREE FLOW)) PAGE 22
 F-18 AIRCRAFT
 F404-GE-400
 FAR FIELD NOISE



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(FIGURE: SOUND PRESSURE LEVEL (SPL)) IDENTIFICATION:)
 (10) EQUAL LEVEL CONTOURS (DB))
 (2000 HZ OCTAVE BAND) OMEGA 1.4)
 (NOISE SOURCE/SUBJECT:) METEOROLOGY:) TEST AM-007-001)
 ())) RUN 05)
 (F-18 AIRCRAFT)) TEMP = 15 C)
 (F404-GE-400)) BAR PRESS = .760 M HG) 22 MAR 79)
 (FAR FIELD NOISE)) REL HUMID = 70 %)
 ())) PAGE 24)

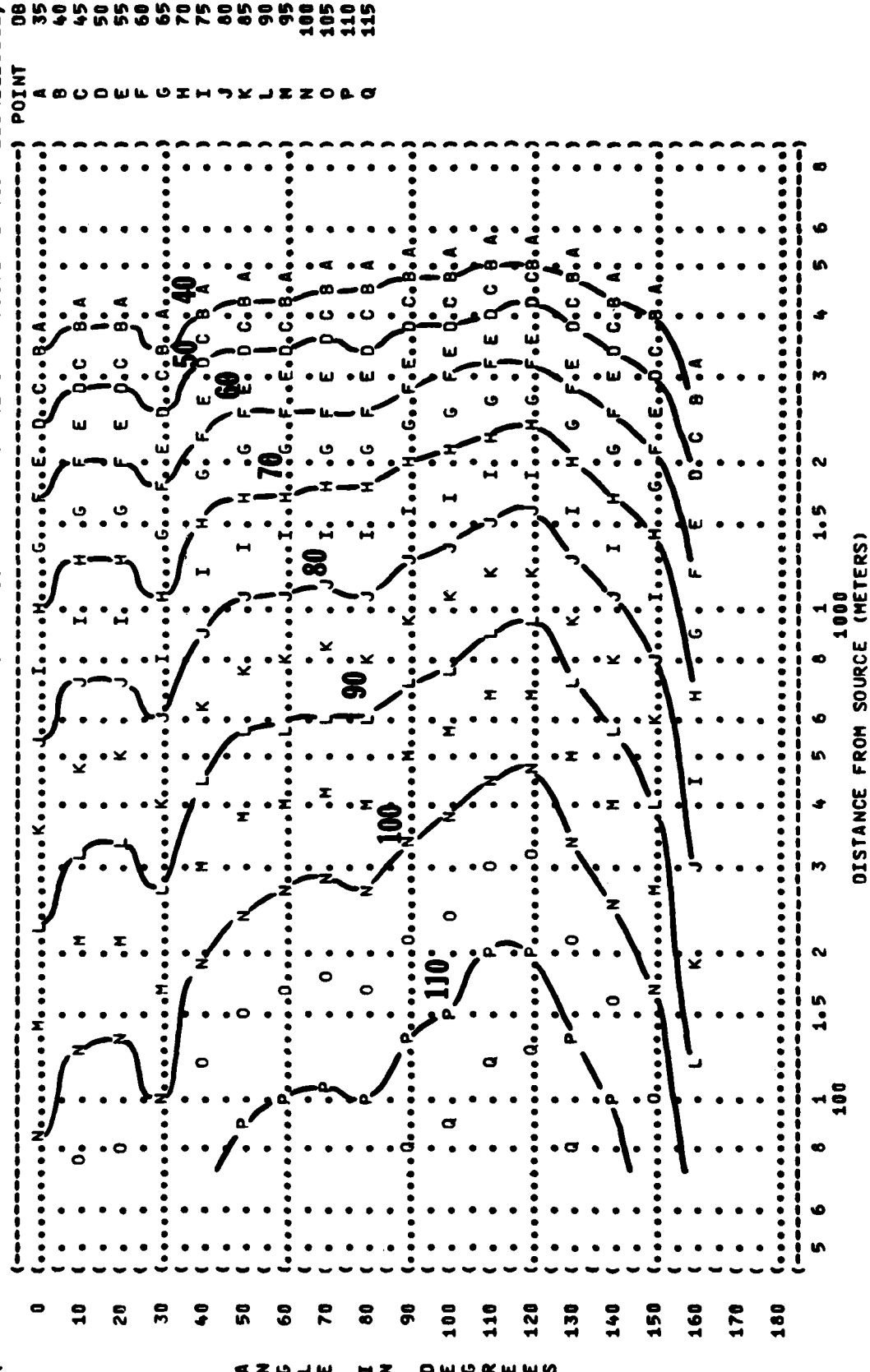


FIGURE 1 SOUND PRESSURE LEVEL (SPL)
 EQUAL LEVEL CONTOURS (DB)
 10 4000 HZ OCTAVE BAND

NOISE SOURCE/SUBJECT: (OPERATION:) METEOROLOGY:) IDENTIFICATION:)
 (AFTERBURNER POWER)) OMEGA 1.4)
 (MAXIMUM)) TEST AM-007-001)
 (SINGLE ENGINE)) RUN 05)
 (FREE FLOW)) 22 MAR 79)
 F-18 AIRCRAFT))
 F404-GE-400))
 FAR FIELD NOISE)) PAGE 25)

